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ABSTRACT

Intended for health educators, this five-unit curriculum on health careers is developed to aid health educators teaching the required instruction in health education for the State of Wisconsin graduation requirements. The units are designed to be taught in one segment or interspersed throughout a 1-semester health course. The units include a variety of activity choices to meet the needs of students in grades 7-12, with the majority in grade 10. An introduction is followed by a course outcome summary that includes target population, description, and outline of competencies and performance standards. Each unit begins with separate unit outlines for middle school and high school that are comprised of these components: learning objectives; student activities with time required; and activities for alternate or extended learning. The unit concludes with worksheets, transparency masters, activity sheets, and information sheets. The units cover the following: (1) an introduction to health careers; (2) diagnostic services; (3) therapeutic services; (4) environmental services; and (5) information services. Units 1, 2, 3, and 5 each consist of materials for 2 days, and Unit 4 consists of materials for 1 day. (YLB)

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Careers Awareness

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Wisconsin

Health Careers Awareness Curriculum

A Curriculum Unit for Health Education

Bryan Albrecht
Division Director
Career and Technical Education

Wisconsin Department of Public Instruction
Madison, Wisconsin

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Foreword

The *Wisconsin Health Careers Awareness* curriculum was developed and designed in partnership with Wisconsin Health Occupations Professional Educators (HOPE), health care professionals, secondary-level science educators, and the Department of Public Instruction's health education consultant and health sciences occupations education specialist to address Standard D-7 in the *Wisconsin Model Academic Standards for Health Education*.

The standard states that "by the end of grade 8 a student will identify potential health careers and by the end of grade 12 a student will evaluate potential health careers based upon interest and abilities." In short, this standard defines what is to be learned at certain points in time and, from a broad perspective, what performances will be accepted as evidence that the learning has occurred. This curriculum contains activities and lessons at each grade level, instructional materials, and proven instructional techniques. It outlines details of day-to-day schooling at the local level.

The people of Wisconsin want public education that ensures that every child has the opportunity for quality learning. I believe that this curriculum will greatly assist educators in preparing students to meet the standard in preparation for graduation while exposing students to the challenging world of health sciences careers. My thanks to those of you that contributed to this important curriculum effort.

Elizabeth Burmaster
State Superintendent

Introduction

Many of the fastest growing occupations in Wisconsin are concentrated in health services. Factors contributing to industry growth include our aging population and its need for increased health services, as well as the increased use of medical technology for diagnosis and treatment.

This health careers curriculum has been developed to meet two of the Wisconsin Model Academic Standards for Health Education:

D7 in Grade 8 - Identify potential health careers.
D7 in Grade 12 - Evaluate potential health careers based upon interests and abilities.

A strong effort has been made to provide a self-contained and user-friendly curriculum, which will provide an initial awareness of health career opportunities for all Wisconsin students.

Suggested activities are given for both middle school and high school students, recognizing that most health education courses in Wisconsin are taught between eighth and tenth grades. Lessons can be taught as a five- or ten-day unit, depending upon time available. In addition, the five segments can be interspersed throughout the health education course to provide maximum flexibility. The chart below shows a cross-reference of activities matched to the required health education course content.

Health Careers Diagnostic – Services	Health Education Required Content
Observation Activity	Relationships
Knee-bone Connected to the Thighbone Activity	Accident Prevention
Flex and Reflex Activity	Gaining and Maintaining Physical Fitness
Autopsy of a Pickle Activity	Disease Prevention
Hearing Activity	
Solving Crimes with Forensics Activity	
Static EMG Graphics Activity	
Health Careers – Therapeutic Services	
I Can Breath Activity	Alcohol/Other Drugs and Disease Prevention
Flex Your Muscles Activity	Gaining and Maintaining Physical Fitness
Paper Airplane Activity	Relationships
Acting It Out Activity	
A Day in the Life of . . . Activity	
Health Careers – Environmental Services	
Contaminated Glove Activity	Disease Prevention
Spread the Knowledge Activity	
Black Light/Germ Activity	
Health Careers – Information Services	
What Do You Think? Activity	Relationships
"Hello?" Phone Activity	

Course Information

Title	Health Careers Curriculum
Organization	Wisconsin Department of Public Instruction
Developers	S. Blahnik, M. Fleischmann, W. Hinz, T. Kotlowski, D. Winger
Development Date	7/13/2001
Instructional Level	Middle School and High School

Target Population

All students taking the required instruction in Health Education for the State of Wisconsin graduation requirements should complete this curriculum. Students will range from grades 7-12, with the majority in 10th grade.

Description

This is a 5-unit curriculum on health careers to be used by Health Educators. The units are designed so that they can be taught in one segment or interspersed throughout a one-semester health course. The units include a variety of activity choices to meet the needs of students in grades 7-12, since the health course is offered to these various age groups around the state. The units are designed by current Health Occupations teachers, some of whom are also licensed in Health Education; the work has also been reviewed by health professionals.

Competencies and Performance Standards

A. Introduction to Health Careers

1. Identify potential health careers

Performance will be satisfactory when:

- learner plays "Medical Experiences Bingo" game
- learner works in small groups to identify each occupation in the "who" section on the "Medical Occupations Chart"
- learner uses "Health Care Service Area" transparency to review types of services
- learner completes "What's the Big Idea" worksheet
- learner works in small groups to sort "Health Care Occupation Cards" by service area, then checks with "Sample Occupations" transparency
- learner identifies what health care setting their assigned medical occupation would be employed in by standing next to the label, then helps the group complete "where" section on the "Medical Occupations Chart"
- learner uses the training clues transparency to complete the "how long" section of the "Medical Occupations Chart"
- learner plays "What's My Line" game with one student answering classmates' questions about the training, skills, or work setting until the correct occupation has been selected
- learner uses Career Info Net and the Department of Workforce Development websites to locate answers to the "Search the Stats" activity
- learner brainstorms health care occupations, writing each on a blank note card, then uses "Health Care Services Areas" transparency to sort the cards by service area
- learner shares medical treatment experience stories, including the occupations of workers providing care and the settings in which care was delivered
- learner uses phone book to locate an example of assigned health care facility type to share with the class
- learner participates in "Five Minute Reflection" activity
- learner helps create a 30-second "TV Commercial" promoting health careers, including a slogan, humor, spokesperson, or other marketing strategy
- learner attends Health Occupations Students of America (HOSA) guest speaker session
- learner investigates www.hosa.org website
- learner attends guidance counselor presentation on health occupations classes and other preparatory course work for health careers

Competence will be demonstrated:

- In the activities chosen by the teacher

Learning Objectives

a. Show awareness of the wide variety of occupations available in the health care/ medical occupations field
b. Identify the four service areas which encompass all health/medical occupations

Linked Standards

Wisconsin Health Education Standards - Grade 8

D: Information and Services—Students will demonstrate the ability to access valid health information and services

2. Evaluate potential health careers based upon interests and abilities

Performance will be satisfactory when:

- learner views health careers video
- learner completes "My Interests" survey
- learner fills out "Careers Equation" page and discusses with the group

- learner uses www.wihealthcareers.org website to research and report on individual careers
- learner uses career.missouri.edu/students/index.html website to complete the career interest game based on John Holland's theory of personality types and corresponding work

Competence will be demonstrated:

- In the activities selected by the teacher

Learning Objectives

a. Recognize the wide variety of health care settings in which health care is delivered
b. Identify the levels of training necessary to work in the health care field
c. Assess personal interests and abilities as they pertain to the four health care service areas

Linked Standards

Wisconsin Health Education Standards - Grade 12

D: Information and Services—Students will demonstrate the ability to access valid health information and services.

B. Diagnostic Services

1. Define diagnostic services

Performance will be satisfactory when:

- learner defines Diagnostic Services as direct care occupations involved in creating a picture of the health status at a single point in time

Competence will be demonstrated:

- In activities selected by teacher

Learning Objectives

a. Explain the meaning of the term "diagnostic"

2. Identify diagnostic services careers

Performance will be satisfactory when:

- learner fills in "Word Scramble" on diagnostic health care occupations
- learner reviews career titles from "Sample Occupations in Each Service Area" chart
- learner researches a health career related to diagnostic services as an independent project
- learner searches out at least five unfamiliar diagnostic careers using the "Health Organization List," Health Occupation Websites" and "Comparing Careers Form" in the appendix

Competence will be demonstrated:

- In activities selected by teacher

Learning Objectives

a. List diagnostic services careers
b. Differentiate between various diagnostic services careers

Linked Standards

D: Information and Services—Students will demonstrate the ability to access valid health information and services

3. **Evaluate potential diagnostic services health careers based on interests and abilities**

Performance will be satisfactory when:

- learner simulates job settings of diagnostic workers in "Small Group Simulation" activity
- learner explains and demonstrates "Flex & Reflex Activity"
- learner views video "I Am Your Child"
- learner practices observation skills in "Observation Activity"
- learner examines medical imaging in "Knee Bone's Connected to the Thigh Bone" activity

Competence will be demonstrated:

- In activities selected by teacher

Learning Objectives

a. Identify traits and skills of diagnostic service workers
b. Compare personal traits and skills to those of diagnostic service workers

Linked Standards

A: Health Promotion and Disease Prevention—Students will understand concepts related to personal health promotion and disease prevention
B: Healthy Behaviors—Students will practice behaviors to promote health, prevent disease, and reduce health risks.
D: Information and Services—Students will demonstrate the ability to access valid health information and services.

C. Therapeutic Services

1. Define therapeutic services

Performance will be satisfactory when:

- learner reviews "Therapeutic Overhead"

Competence will be demonstrated:

- In activities selected by teacher

Learning Objectives

a. Explain the meaning of the term "therapeutic"

2. Identify therapeutic services careers

Performance will be satisfactory when:

- learner reviews the "Sample Occupations in Each Service Area" chart
- learner listens to a guest speaker in the therapeutic service field using the "Guest Speaker Invitation" sheet and "Presentation Summary Form" in the appendix
- learner compares different therapeutic careers using the "Research Reference List"

Competence will be demonstrated:

- in activities selected by teacher

Learning Objectives

a. List therapeutic services careers
b. Differentiate between various therapeutic services careers

Linked Standards

D: Information and Services—Students will demonstrate the ability to access valid health information and services

3. Evaluate potential therapeutic services health careers based on interests and abilities

Performance will be satisfactory when:

x

- learner experiences what it takes to increase muscular strength by completing the "Flex Your Muscles Activity"
- learner experiences what it may be like to have a disability in "The Paper Airplane Activity"
- learner sees what it may be like to experience respiratory distress with the "Breathing Activity"
- learner examines skills needed for the therapeutic field with the "Acting it Out Activity"
- learner investigates different therapeutic careers in "To Whom It May Concern" Activity
- learner investigates mental therapeutic services by completing "A day in the life of . . ." activity

Competence will be demonstrated:

- in activities selected by teacher

Learning Objectives

a. Identify traits and skills of therapeutic service workers
b. Compare personal traits and skills to those of therapeutic service workers

Linked Standards

A: Health Promotion and Disease Prevention—Students will understand concepts related to personal health promotion and disease prevention
D: Information and Services—Students will demonstrate the ability to access valid health information and services.
E: Culture, Media, and Technology—Students will analyze the impact of culture, media, technology, and other factors on health.
F: Communication—Students will demonstrate the ability to use effective interpersonal communication skills to enhance health.

D. Environment Services

1. Define environmental services

Performance will be satisfactory when:

- learner seeks out the Biohazard Policy in their school or place of employment and reports findings to class
- learner defines environmental services using the "Meaning of environmental Services" overhead
- learner observes the spread of germs by completing the "Blacklight/Germ Activity"
- learner assesses own knowledge about infection control by completing "Spread the Knowledge, Not the Germs"

Competence will be demonstrated:

- In activities selected by teacher

Learning Objectives

a. Explain the meaning of the term "environmental services"

2. Identify environmental services careers

Performance will be satisfactory when:

- learner attends to presentation of a health career guest speaker, using "Presentation Summary Form" in appendix
- learner identifies environmental services careers using "Sample Occupations in Each Health Care Area" transparency
- learner attends to health careers video
- learner investigates medical engineering, completing student notes sheet

Competence will be demonstrated:

- In activities selected by teacher

Learning Objectives

a. List environmental services careers
b. Differentiate between various environmental services careers

Linked Standards

A: Health Promotion and Disease Prevention—Students will understand concepts related to personal health promotion and disease prevention
B: Healthy Behaviors—Students will practice behaviors to promote health, prevent disease, and reduce health risks.
C: Goal Setting and Decision Making—Students will demonstrate the ability to use goal-setting and decision-making skills to enhance health.
D: Information and Services—Students will demonstrate the ability to access valid health information and services
F: Communication—Students will demonstrate the ability to use effective interpersonal communication skills to enhance health.

3. **Evaluate potential environmental services health careers based on interests and abilities**

Performance will be satisfactory when:

- learner demonstrates how to put on a sterile gown and explains which health care careers use this personal protective gear (See "Personal Protective Equipment")
- learner describes the job duties, education required, and yearly earnings of environmental service careers using "List of Environmental Service Careers"
- learner attends to video of a health care professional removing gloves, washing hands, scrubbing for surgery, and putting on gloves
- learner interviews a person in a chosen health career using "Interview Questions" in appendix
- learner researches the health career of choice using references and "Research a Career," "Health Organization Listing," "Health Occupations Websites" and "Comparing Careers Form" in appendix
- learner attends guest speaker in environmental services career
- learner observes Personal Protective Equipment used in health care through videotaping and demonstrations
- learner examines the difficulty of removing contaminated gloves using the "Contaminated Glove Activity"
- learner seeks out the biohazard policy for school or workplace and reports on findings
- learner views video on health careers, such as "Careers in Health Care," "Choices," or "So Many Choices: Careers in Health Care"

Competence will be demonstrated:

- In activities chosen by teacher

Learning Objectives

a. Identify traits and skills of environmental service workers
b. Compare personal traits and skills to those of environmental service workers

Linked Standards

A: Health Promotion and Disease Prevention—Students will understand concepts related to personal health promotion and disease prevention
B: Healthy Behaviors—Students will practice behaviors to promote health, prevent

disease, and reduce health risks.

D: Information and Services—Students will demonstrate the ability to access valid health information and services.

E. Information Services

1. Define information services

Performance will be satisfactory when:

- o learner defines information services using terminology concepts with "Break it Down" worksheet

Competence will be demonstrated:

- o In activities selected by teacher

Learning Objectives

a. Explain the meaning of the term "information services"

2. Identify information services careers

Performance will be satisfactory when:

- o learner identifies information services careers and terms in "Search Me" puzzle
- o learner compares information services careers in "Who am I?" activity
- o learner identifies information services skills, environments, and careers with a tour of a health insurance facility
- o learner completes "Information Services Scavenger Hunt" activity as part of a tour experience or as an extra credit challenge
- o learner differentiates between various information services workers and roles in "Information Services Charades" activity
- o learner becomes aware of the world of health insurance with the "Family Insurance Survey"

Competence will be demonstrated:

- o In activities selected by teacher

Learning Objectives

a. List information services careers

b. Differentiate between various information services careers

Linked Standards

D: Information and Services—Students will demonstrate the ability to access valid health information and services

3. Evaluate potential information services health careers based on interests and abilities

Performance will be satisfactory when:

- o learner assesses personal characteristics related to information services careers using "Do you have what it takes?" worksheet
- o learner reads "Observe, Record, Report" and practices correcting written errors in "Broken Record"
- o learner practices using a variety of filing systems using "I Can File!"
- o learner practices phone skills using one or more of the scenarios in "Hello"
- o learner internalizes the importance of information services workers responsibilities with discussion of "Who's Reading Your Medical Records?" article
- o learner compares personal traits and values to those needed in an information services career during "What do you Think?" discussions

Competence will be demonstrated:

- o In activities selected by teacher

Learning Objectives

a. Identify traits and skills of information service workers

b. Compare personal traits and skills to those of information service workers

Linked Standards

D: Information and Services—Students will demonstrate the ability to access valid health information and services.

F: Communication—Students will demonstrate the ability to use effective interpersonal communication skills to enhance health.

Introduction to Health Careers A

Middle School

LEARNING OBJECTIVES

- show awareness of the wide variety of occupations available in the health care/medical occupations field
- identify the four service areas that encompass all health care/medical occupations
- recognize the wide variety of settings in which health care is delivered
- identify the levels of training necessary to work in the health care field
- assess personal interests and abilities as they pertain to the four health care service areas

STUDENT ACTIVITIES

Day 1	*Time Required*
Play "**Medical Experiences Bingo**" (page A-5).	5-10 minutes
View health careers video.	20 minutes
Work in small groups to identify each occupation on the "**Medical Occupations Chart**" (page A-6). ("Who" section only at this time)	10 minutes
Use "**Health Care Service Areas**" (page A-8) transparency to review types of services.	5 minutes
Cut "**Health Care Service Area Cards**" (pages A-10 - A-11) apart and work in small groups to sort occupations by service area. (One set of cards for each group)	5-10 minutes
Use "**Sample Occupations In Each Service Area**" (page A-9) transparency to check card sort.	5 minutes
Complete "**What's the BIG Idea**" (page A-12) reflection sheet.	5-10 minutes

Day 2	***Time Required***
Post titles from "**Health Care Settings**" (page A-13) on the chalkboard or around the room. Assign one square from the "**Medical Occupations Chart**" (page A-6) to each student. Ask students to line up at a setting where their occupation would be employed. Complete "Where" section of chart as a group.	15 minutes
Use "**Training Clues**" (page A-14) transparency to complete the "How Long" section of the "**Medical Occupations Chart**" (page A-6).	10 minutes
Play "What's My Line" game. One student privately chooses one of the careers from the "**Medical Occupations Chart**" (page A-6). Remaining students ask questions about the training, skills, or work setting until the correct occupation has been selected.	10 minutes or play until all choices have been used
Complete "**My Interests**" survey (pages A-15 - A-16).	5-10 minutes
Fill out "**My Careers Equation**" (page A-18), using an overhead of "**Educational Steps In Health Career Training**" (page A-17) to help students see the amount of training required. Discuss and compare results as a group.	10 minutes

ACTIVITIES FOR ALTERNATE OR EXTENDED LEARNING

Use www.wihealthcareers.org website to research and report on individual careers.

Use http://career.missouri.edu/students/index.html website (Enter the guest section and click on student, then finding a career, and finally career interests game.) Complete the careers game based on John Holland's theory of personality types and corresponding work preferences.

Introduction to Health Careers A

High School

LEARNING OBJECTIVES

- show awareness of the wide variety of occupations available in the health care/medical occupations field
- identify the four service areas that encompass all health care/medical occupations
- recognize the wide variety of settings in which health care is delivered
- identify the levels of training necessary to work in the health care field
- assess personal interests and abilities as they pertain to the four health care service areas

STUDENT ACTIVITIES

Day 1	***Time Required***
Use Career Info Net and the Wisconsin Department of Workforce Development website to locate answers to "**Search the Stats**" (page A-19) worksheet questions.	15 minutes
View health careers video.	20 minutes
Brainstorm as many health care occupations as students can recall. Write each occupation on a blank note card.	10 minutes
Use "**Health Care Service Areas**" (pages A-8 - A-9) transparency to review types of services, then sort note cards by service area.	10 minutes

Day 2	***Time Required***
Share students' medical treatment experience stories, and name the occupations of workers providing care, and the setting in which care was delivered.	15 minutes
Assign one health care facility to each student. See "**Health Care Settings**" (page A-13) for list of facility types. Use phone books to locate a local example of each facility type.	10 minutes

Complete "**My Interests**" (pages A-15 - A-16) survey , then show "**Educational Steps In Health Career Training**" (page A-17) transparency of careers grouped by level of education/training.	15 minutes
"**Five Minute Reflection**" (page A-21) activity (see accompanying page for directions). Use "**Top Ten Reasons to Consider a Health Career**" (page A-22) during discussion to enrich this activity.	5 minutes

ACTIVITIES FOR ALTERNATE OR EXTENDED LEARNING

Use www.wihealthcareers.org website to research and report on individual careers.

Use http://career.missouri.edu/students/index.html website (Enter the guest section and click on student, then finding a career, and finally career interests game.) Complete the careers game based on John Holland's theory of personality types and corresponding work preferences.

Have small groups of students create a thirty-second "TV commercial" promoting health careers. Include a slogan; and use humor, a well-known spokesperson, or other successful marketing strategies in the development of each commercial.

Invite your local HOSA (Health Occupations Students of America) representatives and/or advisor to talk about health occupations course work and HOSA career preparation activities.

Check out the HOSA website at www.hosa.org.

Invite a guidance counselor to talk about health occupations classes and other preparatory course work for health careers.

Medical Experiences Bingo

DIRECTIONS: Go around the room and ask other students if they have ever had any of the following medical experiences. They must initial the box if they've had that experience. The first student to get five in a row and yell "BINGO" wins.

ate hospital food	had a cavity	received stitches	rode in an ambulance	had x-rays taken
had tonsils removed	had hearing checked	used crutches	received a tetanus vaccination	wore braces
saw a baby on a sonogram	had teeth cleaned	had a sports injury	had blood drawn	took prescription medication
visited a grandparent in a care facility	knew someone who was a blood donor	had vision checked	received oxygen	stayed in a clean hospital room
became sick at school	saw a bill for medical services	knew someone with depression	took a sick pet to a doctor	knew someone getting laser vision correction

Medical Occupations Chart

DIRECTIONS: As you learn more about health careers, fill in the spaces using your bingo card as a guide for each square. The first square has been done as an example.

Who: Registered Dietician Where: Hospital/Clinic Educ. Req'd: 4 Years	Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:
Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:	Who: Where: Educ. Req'd:
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Medical Occupations Chart Key

DIRECTIONS: As you learn more about health careers, fill in the spaces using your bingo card as a guide for each square. The first square has been done as an example.

Who: Registered Dietician Where: Hospital/Clinic Educ. Req'd: 4 Years	Who: Dentist Where: Dental Clinic Educ. Req'd: More Than 4 Years	Who: Physician Where: Medical Clinic Educ. Req'd: More Than 4 Years	Who: Emergency Medical Technician Where: Scene Of Accident Educ. Req'd: 1-2 Years	Who: X-ray Technician Where: Clinic Or Hospital Educ. Req'd: 2 Years
Who: Surgeon Where: Hospital Educ. Req'd: More Than 4 Years	Who: Audiologist Where: Clinic Educ. Req'd: More Than 4 Years	Who: Physical Therapist Where: Clinic Or Hospital Educ. Req'd: More Than 4 Years	Who: Registered Nurse Where: Clinic Or Hospital Educ. Req'd: 2-4 Years	Who: Orthodontist Where: Clinic Or Office Educ. Req'd: More Than 4 Years
Who: Sonographer Where: Clinic Or Hospital Educ. Req'd: 2 Years	Who: Dental Hygienist Where: Dental Clinic Educ. Req'd: 2 Years	Who: Physical Therapist Where: Sports Med. Clinic Educ. Req'd: More Than 4 Years	Who: Medical Assistant Where: Clinic Or Hospital Educ. Req'd: 1 Year	Who: Pharmacist Where: Pharmacy, Clinic, Or Hospital Educ. Req'd: More Than 4 Years
Who: Cert. Nursing Assistant Where: Hospital, Nursing Home, Or Assist. Living Educ. Req'd: Less Than 1 Year	Who: Phlebotomist Where: Red Cross, or Blood Drive Educ. Req'd: Less Than 1 Year	Who: Optometrist Where: Clinic Educ. Req'd: More Than 4 Years	Who: Respiratory Therapist Where: Clinic, Hospital, Or At Home Educ. Req'd: 2 Years	Who: Housekeeping Worker Where: Hospital Educ. Req'd: On The Job Training
Who: School Nurse Where: School Educ. Req'd: 1, 2 Or 4 Years	Who: Medical Billing Secretary Where: Clinic Or Hospital Educ. Req'd: 1 Or 2 Years	Who: Psychologist Where: Clinic, Office, Or Hospital Educ. Req'd: More Than 4 Years	Who: Veterinarian Where: Clinic Educ. Req'd: More Than 4 Years	Who: Opthalmologist Where: Clinic Educ. Req'd: More Than 4 Years

Health Care Service Areas

All health occupations are grouped into four areas according to the type of services provided.

DIAGNOSTIC service workers help with the diagnosis of illness and disease. While these workers may or may not work directly with patients, they must prepare and perform tests accurately.

THERAPEUTIC service workers are concerned with the care and health status of a client over time. They must make careful observations, provide proper treatment, and report results.

INFORMATIONAL service workers support all other medical services by processing and documenting information regarding client care. These workers analyze and extract information using automated systems. They understand the flow of information within the health care facility.

ENVIRONMENTAL service workers provide a therapeutic and supportive setting for the delivery of care. They repair and maintain facilities and equipment, follow aseptic procedures, and ensure high quality food.

Sample Occupations In Each Service Area

Diagnostic
- Electrocardiographic technician
- Electroencephalographic technician
- Diagnostic imaging technician
- Medical laboratory technician
- X-ray technician
- Sonographer
- Audiologist
- Phlebotomist
- Radiologic technologist

Therapeutic
- Medical assistant
- Pharmacist
- Psychologist
- Speech therapist
- Certified nursing assistant
- Athletic trainer
- Music therapist
- Chiropractor
- Emergency medical technician
- Veterinarian
- Dental hygienist
- Occupational therapist
- Respiratory therapist
- Registered nurse
- Optometrist
- Opthalmologist
- Social worker

Information
- Admitting clerk
- Health care administrator
- Health educator
- Medical librarian
- Medical billing officer
- Medical records technician
- Medical transcriptionist
- Unit coordinator
- Medical coding specialist

Environment
- Biomedical engineer
- Central supply worker
- Dietician
- Dietetic technician
- Housekeeping worker
- Groundskeeper
- Food service worker
- Sanitary manager
- Biomedical equipment technician

Health Care Service Areas Card Sort

Athletic Trainer	Phlebotomist
Admitting Clerk	Biomedical Engineer
Music Therapist	Electrocardiographic Technician
Health Care Administrator	Central Supply Worker
Chiropractor	Diagnostic Imaging Technician
Medical Librarian	Dietician
Emergency Medical Technician	Medical Laboratory Technician

Health Care Service Areas Card Sort (2)

Housekeeping Worker	Medical Assistant
X-Ray Technician	Medical Billing Officer
Housekeeping Worker	Pharmacist
Sonographer	Medical Records Technician
Groundskeeper	Psychologist
Speech Therapist	Audiologist
Certified Nursing Assistant	Food Service Worker

WHAT'S THE BIG IDEA?

An Important Idea

A New Idea

A Surprising Idea

An Interesting Idea

Health Care Settings

Medical Clinics
Vision Clinics
Dental Clinics
Rehabilitation Centers
Assisted Living Facilities
Health Maintenance Organizations
Home Health Care Agencies
Hospice Care
Adult Day Care
Senior Centers
Nursing Homes
State University Medical Centers
State, County, City Public Health Services
Volunteer Agencies (Red Cross, March Of Dimes)
Emergency Medical Services
Urgent Care Centers
Outpatient Surgery Facilities
General Hospitals
Specialty Hospitals
Veteran's Hospitals

Training Clues

Technical Diploma: Training for one year or less at a technical college.

Associate Degree: Two-year degree from a technical college.

Bachelor's Degree: Four-year degree from a college or university.

Master's Degree: At least one full year of study beyond a bachelor's degree.

Doctorate Degree: The highest earned degree in the U.S. It generally requires at least two years of additional study, but may take several years to complete depending upon the specific research or specialized training involved.

Certification Licensure Registration:

These terms mean the health care worker has successfully completed an approved training program and has passed skills tests to prove competency.

As a general guide . . . .
Workers, aides, and assistants have two years or less of training after high school. Some may be trained "on the job" and require no additional schooling beyond high school.

Technicians typically have a technical diploma or an associate degree and have received training at a technical college after high school.

Technologists most often have completed a bachelor's degree at a college or university with a major in a particular health care specialty.

My Interests

Listed below are various activities and interests engaged in by people every day. Choose the activities that you like and absolutely don't like, then check the yes or no column. If you have no preference either way, leave it blank. For now, ignore the ABC column.

	Activity	Yes	No
A	Fix a bike		
B	Do experiments		
C	Study Psychology		
D	Class Officer		
E	Keep organized records		
F	Be in a class play		
A	Care for my car		
B	Solve problems		
C	Go to a dance		
D	Debate		
C	Work with others		
F	Decorate my room		
A	Build model cars		
B	Play chess		
C	Help a friend with homework		
A	Play with gadgets		
B	Study Biology		
D	Use power		
E	Have a neat room		
F	Doodle		
A	Hook up a stereo		
B	Study the stars		
C	Sell candy at school		
D	Influence people		
E	Rewrite notes		
F	Play an instrument		
A	Drive a car		
B	Work with plants		
C	Help with community project		
D	Organize a group		
E	Be on time		
F	Take Art		
A	Study Physics		
B	Use the microscope		
C	Talk to people		
C	Be a camp counselor		

	Activity	Yes	No
E	Take turns		
F	Do bulletin board		
A	Fix a typewriter		
B	Create science fair project		
C	Make a speech		
D	Read business magazines		
E	Clean your closet		
F	Draw or paint a picture		
A	Run machinery		
B	Study Chemistry		
C	Baby-sit		
D	Save money		
E	Practice good study habits		
F	Write letters to friends		
D	Active in student council		
D	Demonstrate status		
E	Follow rules		
F	Sew		
A	Understand calculations		
B	Read a map		
C	Coach a team		
D	Study Math		
E	Have a "to do" list		
F	Take photos		
A	Tinker		
B	Solve math problems		
C	Volunteer at the hospital		
D	Like to be treasurer		
E	Collect items as a hobby		
F	Write short stories		
B	Study Science		
B	Dissect animals		
C	Meet new people		
D	Head a meeting		
E	Take notes		
F	Draw on textbook cover		

My Interests Tally Sheet

Name ______________________

Now that you've completed the interest group survey, go back and count the number of checks in the YES and NO columns for each letter and write the number in the appropriate column below.

ABC	Yes	No	Characteristics	Other Careers
A			Mechanical activities Like to work with tools and machines.	Respiratory Therapist Biomedical Equipment Tech. Physical Therapist Environmental Engineer Central Supply Worker Operating Room Nurse
B			Independent Problem solver Like science field	Cytotechnologist Nutritionist Biologist Lab Technician Physician Pharmacist Nurse Practitioner
C			People-oriented Teaching and helping others	Nurse Health Educator Health Occupations Teacher Physician Physician Assistant Physical Therapist Occupational Therapist Social Worker Psychologist
D			Leader Likes financial matters	Hospital Administrator Health Planner Public Relations Worker Long-Term Care Admin. Dean of Nursing School
E			Structure is important Efficient Likes order	Dialysis Technician Surgeon ICU Nurse Med. Lab Technician Phlebotomist Medical Coding Specialist Dental Hygienist Military Nurse
F			Creative Unstructured environment	Medical Illustrator Hospital Architect Hospital PR Person Medical Photographer

The higher the YES score, the more likely you are to be successful and happy with that career choice. Research your choices at www.wihealthcareers.org

Educational Steps In Health Career Training

One Year Or Less

- Emergency medical technician
- Licensed practical nurse
- Massage therapist
- Medical assistant
- Certified nursing assistant
- Pharmacy technician
- Phlebotomist
- Dental assistant
- Health unit coordinator
- Medical secretary
- Medical coding specialist
- Medical transcriptionist
- Home health aide
- Optician
- Central supply worker
- Housekeeping worker

Associate Degree

- Veterinary technician
- Respiratory therapist
- Registered nurse
- Histologic technician
- Medical lab technician
- Dental hygienist
- Medical records technician
- Dietetic technician
- Radiological technician/x-ray tech
- Sonographer
- Nuclear Medicine technician
- Biomedical equipment technician
- Cardiovascular technician
- Electroencephalographic technician
- Surgical technician
- Occupational therapy assistant
- Physical therapy assistant

Bachelor's Degree

- Occupational therapist
- Registered nurse
- Nuclear medicine technologist
- Cytotechnologist
- Histotechnologist
- Medical technologist
- Dietician
- Health care public relations
- Physician's assistant
- Biomedical engineer
- Industrial hygienist
- Recreational therapist
- Health educator
- Health Occupations teacher
- Medical records administrator

Advanced Degrees Master's/Doctorate

- Art/music/dance therapist
- Physical therapist
- Speech therapist
- Chiropractor
- Physician
- Dentist
- Opthalmologist
- Pharmacist
- Psychologist
- Health services administrator
- Podiatrist
- Optometrist
- Medical social worker
- Research scientists
- Perfusionist
- Audiologist
- Veterinarian

My Careers Equation

____________________ Occupations of Interest to Me (from Interest Survey)

+

____________________ Amount of Training Desired

=

____________________ Possible Career Choices for Me

Use www.wihealthcareers.org to research your career choices.

Contact your school counselor for information about health occupations classes at your school.

Check into HOSA (Health Occupations Students of America) at your high school or online at www.hosa.org

Search the Stats

LOOK!
WHERE WILL THE JOBS BE?
SEARCH THE "STATS" AND SEE!

Use the Career Info Net www.careernet.org and Wisconsin Department of Workforce Development www.dwd.state.wi.us websites to fill in these blanks.

1. The top two industries adding the most jobs in Wisconsin in the next ten years are ________________ and __________________.
2. Of the 30 fastest growing occupations in Wisconsin, _________(how many) are in the field of health care services.
3. Across the U.S. the number is _________.
4. The largest number of health care job openings will require a/an ______________ degree.
5. What is the number one job opening in the U.S. for workers with an associate degree? _____________

Search the Stats Key

LOOK!
WHERE WILL THE JOBS BE?
SEARCH THE "STATS" AND SEE!

Use the Career Info Net www.careernet.org and Wisconsin Department of Workforce Development www.dwd.state.wi.us websites to fill in these blanks.

1. The top two industries adding the most jobs in Wisconsin in the next ten years are **business services** and **health services**.
2. Of the 30 fastest growing occupations in Wisconsin, **14** (how many) are in the field of health care services.
3. Across the U.S. the number is **13**.
4. The largest number of health care job openings will require a/an **associate** degree.
5. What is the number one job opening in the U.S. for workers with an associate degree? **RN**

Five Minutes of Reflection

1. Ask students to write down five things they have learned. (2 minutes)
2. Ask them to pair with a partner.
3. Using a watch to time the activity, tell one person to talk for 30 seconds about what he/she has learned.
4. At the end of thirty seconds, call Stop-Switch and the other person talks for thirty seconds, but cannot repeat anything that has been said.
5. At the end of thirty seconds, call Stop-Switch and run the cycle for 15 seconds (alternate people – don't repeat anything that has been said).
6. At the end, ask each pair to write one sentence that summarizes the key idea of what they have learned.
7. Conduct a quick review calling on each pair to hear their sentences.

Adapted from a metacognition activity in *The Mindful School: How to Assess Authentic Learning* by Kay Burke

Top Ten Reasons To Consider A Health Career

10. There are many, many occupations in health care.

9. Health careers can be therapeutic, diagnostic, informational, or environmental.

8. A multi-skilled health care worker is trained in two or more health occupations. These workers are in high demand.

7. Physicians and Physicians Assistants are in highest demand in rural areas.

6. Because people are living longer, there is an increasing need for all types of health care workers.

5. More health care is being delivered at home and in a wide variety of settings other than hospitals and clinics.

4. Computer skills are used by all health care workers to deliver services more efficiently and economically.

3. Many programs for health careers require a relatively short training time.

2. There are health careers to match all personality types: doer, thinker helper, influencer, organizer, and creator.

1. Health careers are some of the fastest-growing employment opportunities in the nation.

Diagnostic Services B

Middle School

LEARNING OBJECTIVES

- explain the meaning of the term "diagnostic services"
- list diagnostic services careers
- differentiate between various diagnostic services careers
- identify traits and skills of diagnostic services workers
- compare personal traits and skills to those of diagnostic services workers

STUDENT ACTIVITIES

Day 1	***Time Required***
Define Diagnostic Services (Direct Care occupations involved in creating a picture of the health status at a single point in time).	5-10 minutes
Fill in **"Word Scramble"** (page B-27) on Diagnostic Health Care Occupations.	10-15 minutes
Review Career Titles from **"Sample Occupations in Each Service Area"**(page A-9) chart.	5-10 minutes
Simulate job settings of diagnostic workers - **"Small Group Simulation"** (page B-29).	15-20 minutes
Day 2	***Time Required***
Explain and demonstrate **"Flex & Reflex: Involuntary"** (page B-30).	10-15 minutes
View video **"I Am Your Child."** *Cross Reference-Health Unit, Gaining & Maintaining Physical Health	45 minutes
Practice observation skills - **"Observation Activity"** (page B-31).	10-15 minutes
Examine medical imaging **"Knee Bone Is Connected to the Thigh Bone"** (page B-32) activity.	20-30 minutes

ACTIVITIES FOR EXTENDED LEARNING

Independent Project:
Research a Health Career related to Diagnostic Services.
Search out at least 5 unfamiliar diagnostic careers.
(Resource: **Health Organization List**, **Health Occupation Websites**, and **Comparing Careers Form** in Appendix)

Diagnostic Services B

High School

LEARNING OBJECTIVES

- explain the meaning of the term "diagnostic services"
- list diagnostic services careers
- differentiate between various diagnostic services careers
- identify traits and skills of diagnostic services workers
- compare personal traits and skills to those of diagnostic services workers

STUDENT ACTIVITIES

Day 1	*Time Required*
Review definition of diagnostic (Direct Care occupations involved in creating a picture of the health status at a single point in time).	5-10 minutes
Review Career Titles from "**Sample Occupations in Each Service Area**" (page A-9) chart.	5-10 minutes
Compile "**Diagnostic Career Skills**" (page B-33) relevant to a career in the area of diagnostic care.	15-20 minutes
Review and Evaluate "**Static EMG Graphics**" (pages B-34 - B-39) activity.	30-45 minutes

Day 2	*Time Required*
Complete "**Autopsy of a Pickle**" (pages B-40 - B-41) activity.	40 minutes
Demonstrate auditory senses with "**Hearing Activities**" (pages B-42 - B-44).	30 minutes
Simulate forensic science and information "**Solving Crimes With Forensics**" (page B-45) activity.	Time varies

ACTIVITIES FOR EXTENDED LEARNING

Independent Project:
Research a Health Career related to Diagnostic Services.
(Resource: **Health Organization List, Health Occupation Websites,** and **Comparing Careers Form** in Appendix)

Word Scramble

DIRECTIONS: Unscramble the following words as they pertain to diagnostic medical career titles.

Clemida Otcrdo

Gtrdcaooilis

Tntsdei

Golisuadoit

Iincllca Toylaboarr Hcennicita

Raoonprsghe

Dgstrlooaii

Bpciul AlhhteSnrue

Ipcrdeaam

Drioapttsi

Word Scramble Key

DIRECTIONS: Unscramble the following words as they pertain to therapeutic medical career titles.

Clemida Otcrdo(Medical Doctor)

Gtrdcaooilis (Cardiologist)

Tntsdei (Dentist)

Golisuadoit (Audiologist)

Iincllca Toylaboarr Hcennicita
(Clinical Laboratory Technician)

Raoonprsghe (Sonographer)

Dgstrlooaii (Radiologist)

Bpciul Alhhte Snrue (Public Health Nurse)

Ipcrdeaam (Paramedic)

Drioapttsi (Podiatrist)

Small Group Simulation

DIRECTIONS: Working in Small Groups: 3-4 Persons
Read the following explanation and respond first individually, then within your small group. Be ready to share with the full class.

You wake-up one morning with a terrible toothache. What could it be? A dental appointment is set up for you that day at the *Painless Remedy Clinic.* You register upon arrival at the front desk and within a short time are escorted into the dentist office. Envision this scenario as it proceeds and:

1) Make a list of (identify) who you will come in contact with to help you with your tooth problem.

2) Explain which of these professionals are considered to be diagnostic in nature?

3) Share with Large Group- Discuss your reason(s) for classifying as diagnostic.

NOTE: The same scenario could pertain to a visit to either a Medical Clinic or Hospital setting.

Flex and Reflex: Involuntary

Review Definition: Reflexes are involuntary reactions in which the information is processed by the spinal cord and bypasses the brain.
(Voluntary actions are processed by the brain)

Identify examples of actions considered voluntary and involuntary.

Directions: Working in pairs, have one person sit on an elevated flat surface (desk or table). Dangle legs over the edge.

Other partner should tap just below the sitting partner's knee with edge of open hand.

Explain that this impulse is processed by the spinal cord and does not need to be processed by the brain. What type of action is this? (Involuntary)

Brainstorm other examples of reflex actions: (Blinking, Gagging, Sneezing, Breathing, Startling, Pulling away from something hot, etc.)

Have students simulate tasks such as: Raising a hand, writing their names, blowing their noses, etc. What type of action are these? (Voluntary)

Explain that with voluntary actions when given a direction the auditory nerve in the ear sends information to the brain and the brain signals the muscles and nerves to complete the task.

Observation Activity

Equipment Needed: In addition to your usual dress, jewelry and accessories add inconspicuous items to your appearance — stickers, unmatched socks or shoes, etc. Upon entering the room begin your usual classroom practices but instead change your behavior, mannerisms, etc. from the usual.

After approximately 5-10 minutes:

Directions: Ask the students to take out a piece of paper. Turn away from the class and ask them *on their own* to write an observation about your general appearance and behavior(s).

Share the observations with the full class. Discuss the importance of observing as it pertains to the health and medical field. In what type of specific occupations will this be beneficial? What did they find difficult to do in writing their observations? What did they *not* observe?

Note: You may also want to have another individual from outside of your usual class make-up assist you with an impromptu dramatization. Students would once again report what they observed.

*Cross Reference - Health Unit, Relationships

The Knee Bone Is Connected to the Thigh Bone

Equipment Needed: Various X-rays, CAT Scans and other medical imaging products showing bone dislocations, fractures, etc. These may be obtained from your local medical clinic or hospital radiology departments.

Directions: Have students examine the medical images and determine the problems. Share with full class.

Note: This would be a good time to utilize Medical Imaging, Radiology and Orthopedist personnel as classroom speaker(s) to discuss their occupation.

*Cross Reference - Health Unit, Relationships

Diagnostic Career Skills

Directions: In either small groups, large group, on newsprint, or the board—Identify the various skills necessary to be successful in a diagnostic type career as it relates to the health and medical field. Categorize these skills according to personal skills and knowledge skills.

Possible Skills:

Communication
Teamwork
Information Gathering—Timely, Appropriately
Compassion
Listening
Technical Skills—Equipment, Computers
Monitoring—Client Health Status
Assessment—Client Health Status
Knowledge and Understanding of Respective Professional Standards
Body Mechanics
Attention and Planning to Detail
Understanding Logical & Sequential Procedural Set-ups
Preparation of Supplies, Equipment, Personnel
Observation Skills
Evaluation Skills
Reporting Skills

Static EMG Graphics

Equipment Needed: Copies of Chart of Nerve System, Colored EMG Scan, Thermal Scan sheets, Skeletal Model of Human Spine.

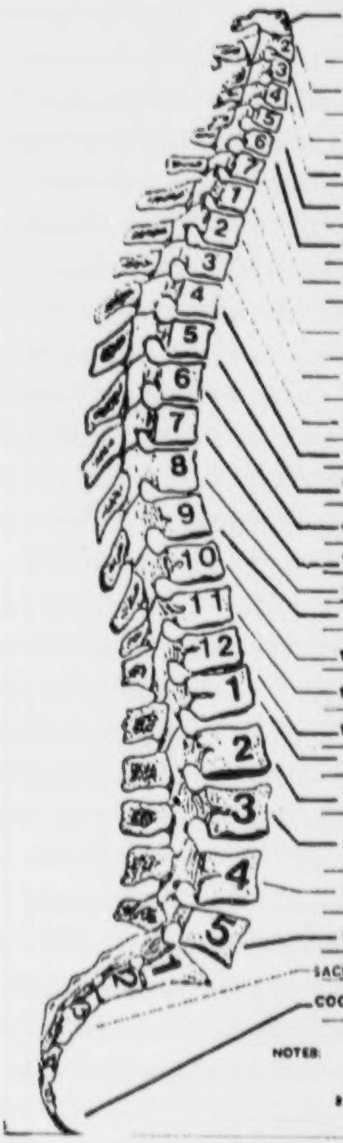
Directions: Hand out Chart of Nerve System to each student. Either hand out one per student, pairs or present a colored overhead of EMG and Thermal Scan sheets. Instruct students on the use of these materials in chiropractic care. Discuss chiropractic care as a profession. Have student(s) review and make diagnostic determinations from the various materials provided as to the health of the individual(s).

Note: Additional similar scans may be available from your local chiropractic clinic(s). Suggestion—Classroom presentation by a chiropractor as to their role, training, equipment and philosophy of care.

*Cross Reference-Health Unit, Gaining & Maintaining Physical Fitness

CHART OF THE NERVE SYSTEM

Every part of the body is controlled by nerves, and every one of these nerves connects directly or indirectly with the spine. This chart was compiled from over a dozen standard medical text and reference books.



	AREAS KNOWN TO RECEIVE NERVE FIBERS FROM THESE NERVES.	SOME OF THE CONDITIONS THAT CAN FOLLOW A PRESSURE ON, OR INTERFERENCE WITH THESE NERVES.
1 C	Blood supply to the head, the pituitary gland, the scalp, bones of the face, the brain itself, inner and middle ear, the sympathetic nervous system.	Headaches, nervousness, insomnia, head colds, high blood pressure, migraine headaches, mental conditions, nervous breakdowns, amnesia, sleeping sickness, chronic tiredness, dizziness or vertigo, St. Vitus dance.
2 C	Eyes, optic nerve, auditory nerve, sinuses, mastoid bones, tongue, forehead.	Sinus trouble, allergies, crossed eyes, deafness, erysipelas, eye troubles, earache, fainting spells, certain cases of blindness.
3 C	Cheeks, outer ear, face bones, teeth, trifacial nerve.	Neuralgia, neuritis, acne or pimples, eczema.
4 C	Nose, lips, mouth, eustachian tube.	Hay fever, catarrh, hard of hearing, adenoids.
5 C	Vocal cords, neck glands, pharynx.	Laryngitis, hoarseness, throat conditions like a sore throat or quinsy.
6 C	Neck muscles, shoulders, tonsils.	Stiff neck, pain in upper arm, tonsilitis, whooping cough, croup.
7 C	Thyroid gland, bursae in the shoulders, the elbows.	Bursitis, colds, thyroid conditions, goiter.
1 D	Arms from the elbows down, including the hands, wrists and fingers, also the esophagus and trachea.	Asthma, cough, difficult breathing, shortness of breath, pain in lower arms and hands.
2 D	Heart including its valves and covering, also coronary arteries.	Functional heart conditions and certain chest pains.
3 D	Lungs, bronchial tubes, pleura, chest, breast, nipples.	Bronchitis, pleurisy, pneumonia, congestion, influenza.
4 D	Gall bladder and common duct.	Gall bladder conditions, jaundice, shingles.
5 D	Liver, solar plexus, blood.	Liver conditions, fevers, low blood pressure, anemia, poor circulation, arthritis.
6 D	Stomach.	Stomach troubles, including nervous, stomach, indigestion, heart burn, dyspepsia, etc.
7 D	Pancreas, islands of Langerhans, duodenum.	Diabetes, ulcers, gastritis.
8 D	Spleen, diaphragm.	Hiccoughs, lowered resistance.
	Adrenals or supra-renals.	
10 D	Kidneys.	Kidney troubles, hardening of the arteries, chronic tiredness, nephritis, pyelitis.
11 D	Kidneys, ureters.	Skin conditions like acne, pimples, eczema, or boils.
12 D	Small intestines, Fallopian tubes, lymph circulation.	Rheumatism, gas pains, certain types of sterility.
1 L	Large intestines or colon, inguinal rings.	Constipation, colitis, dysentery, diarrhea, ruptures or hernias.
2 L	Appendix, abdomen, upper leg, cecum.	Appendicitis, cramps, difficult breathing, acidosis, varicose veins.
3 L	Sex organs, ovaries or testicles, uterus, bladder, knee.	Bladder troubles, menstrual troubles like painful or irregular periods, miscarriages, bed wetting, impotency, change of life symptoms, many knee pains.
4 L	Prostate gland, muscles of the lower back, sciatic nerve.	Sciatica, lumbago, difficult, painful, or too frequent urination, backaches.
5 L	Lower legs, ankles, feet, toes, arches.	Poor circulation in the legs, swollen ankles, weak ankles and arches, cold feet, weakness in the legs, leg cramps.
SACRUM	Hip bones, buttocks.	Sacro-iliac conditions, spinal curvatures.
COCCYX	Rectum, anus.	Hemorrhoids or piles, pruritus or itching, pain at end of spine on sitting.

NOTES: Very few of the conditions listed above wholly fit within the control of any one special nerve. It is up to your Chiropractor to determine the exact location of the cause of the trouble by the method he feels best suited for your case.

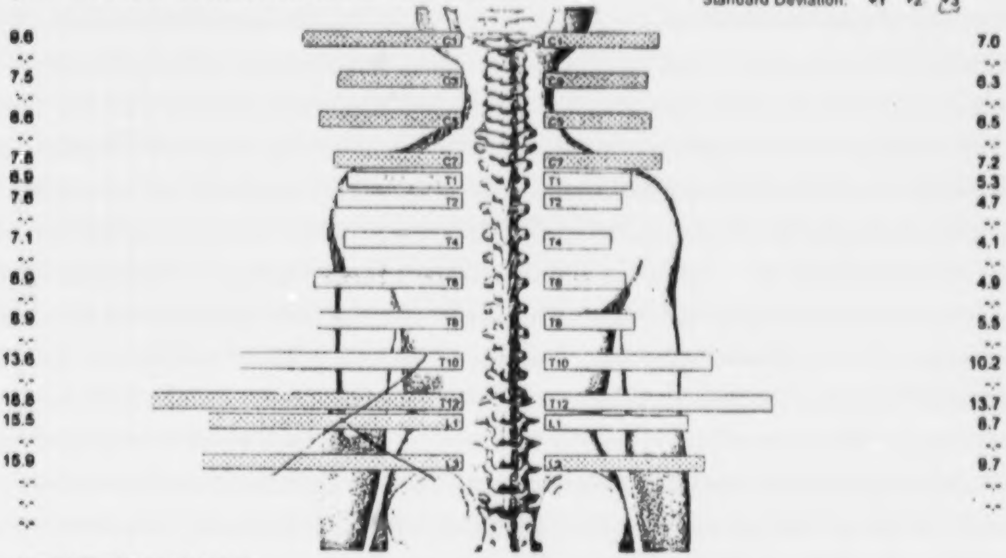
2. Only the commoner conditions and diseases are listed above. It is suggested that you consult your Chiropractor in regard to anything not found on this chart.

BEST COPY AVAILABLE

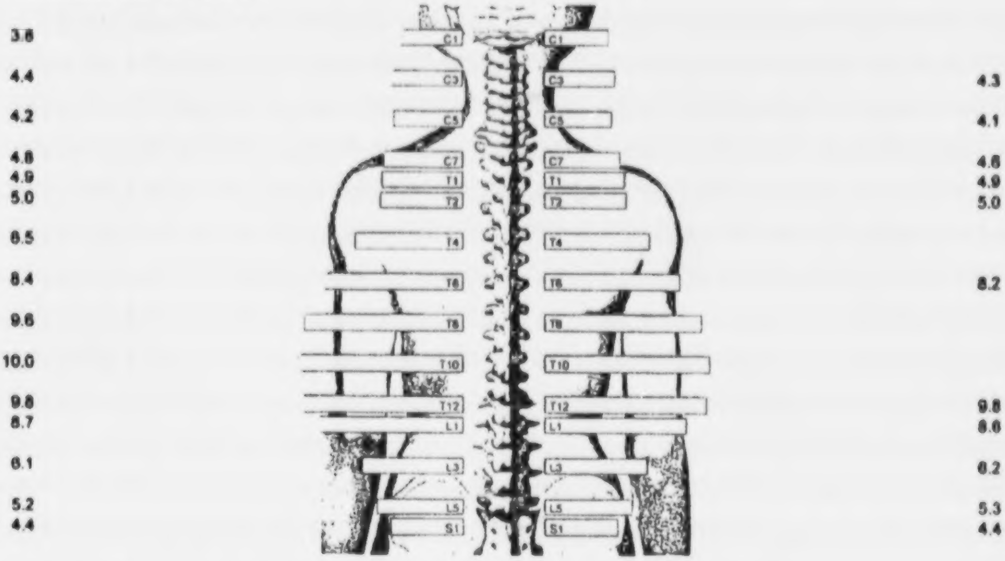
Static EMG Scan

Friday March 12, 1999 04:24PM
Static EMG Scan

Static EMG Graphic: Sil/Neutral in freq. band 25 - 500Hz, 25uV Scale



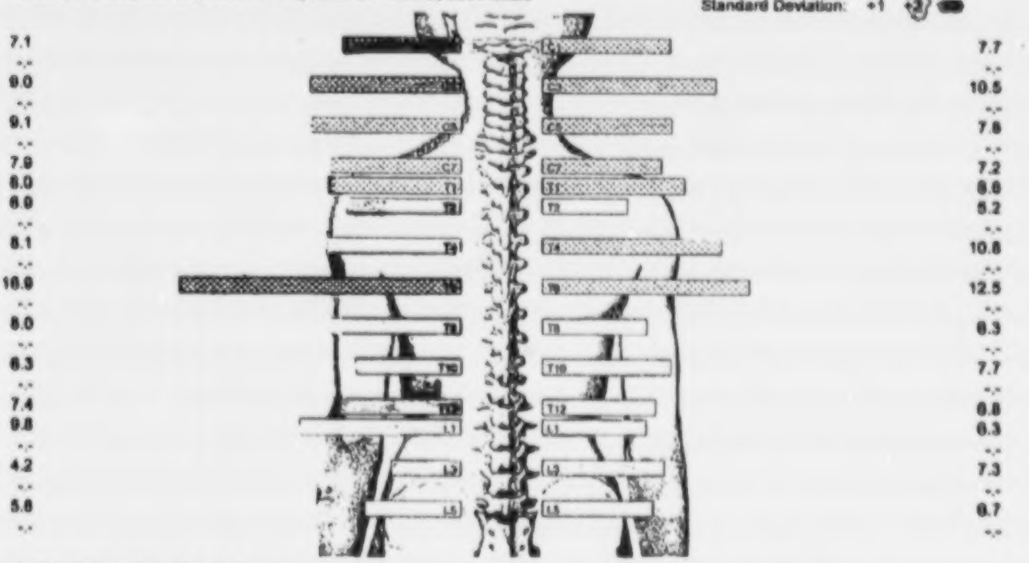
NORMATIVE DATA, 25uV Scale



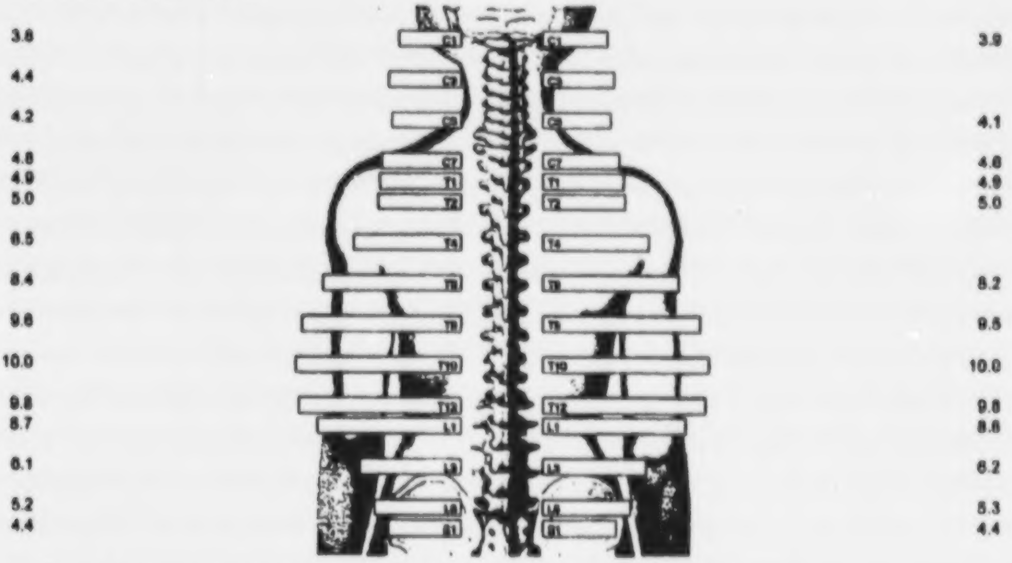
BEST COPY AVAILABLE

Friday February 26, 1999 04:37PM
Static EMG Scan

Static EMG Graphic: Sit/Neutral in freq. band 25 - 500Hz, 25uV Scale



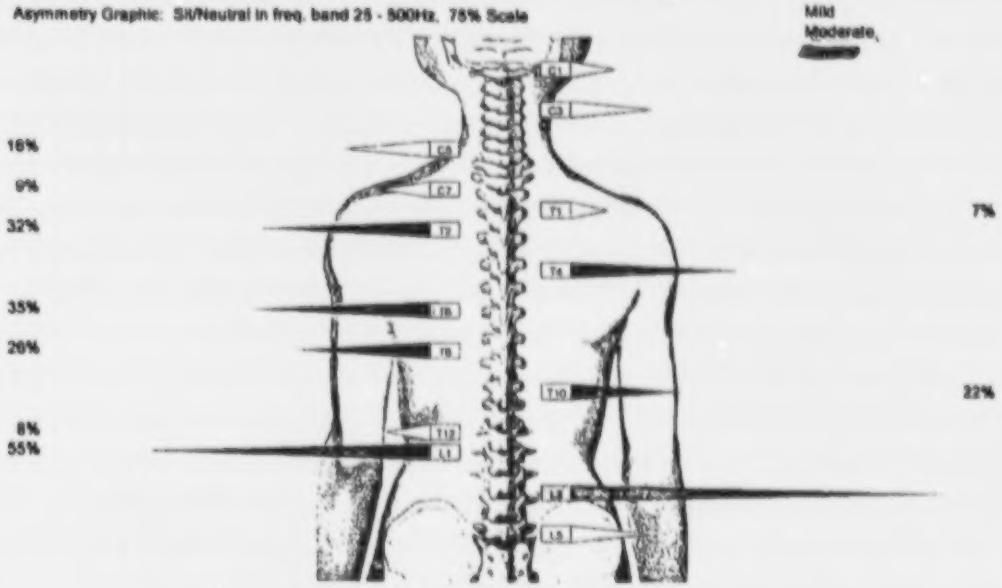
NORMATIVE DATA, 25uV Scale



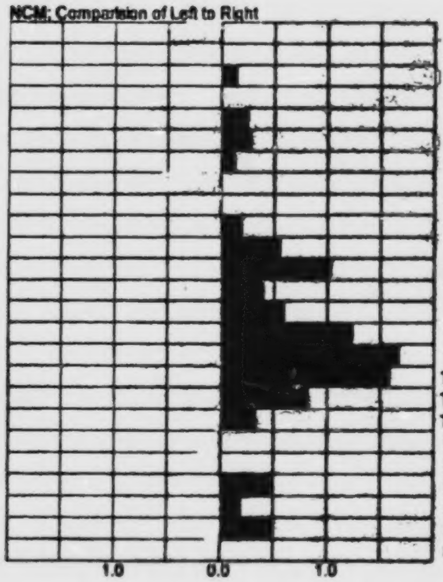
BEST COPY AVAILABLE

Static EMG Scan continued

Friday February 26, 1999 04:37PM
Static EMG Scan



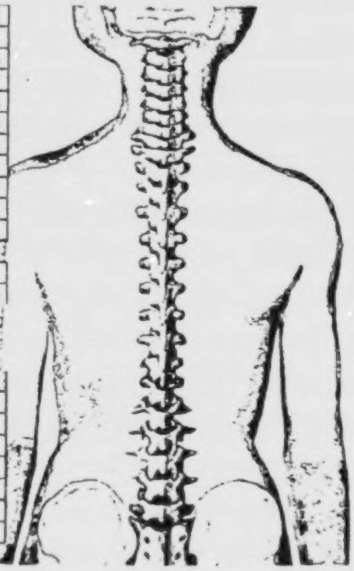
Friday February 26, 1999 04:32PM
Thermal Scan



	Left	Right	Shift
C1	98.6	98.3	0.34
C2	-.-	-.-	-.-
C3	97.8	97.9	0.15
C4	-.-	-.-	-.-
C5	98.0	98.2	0.26
C6	97.6	97.9	0.29
C7	97.5	97.6	0.13
T1	97.4	96.8	0.57
T2	96.8	96.7	0.04
T3	95.6	95.8	0.20
T4	95.4	96.0	0.56
T5	95.4	96.4	1.04
T6	95.4	95.8	0.41
T7	95.6	96.2	0.60
T8	94.8	96.0	1.24
T9	94.5	96.2	1.67
T10	93.9	95.5	1.59
T11	94.3	95.1	0.83
T12	93.8	94.2	0.34
L1	93.9	93.9	0.06
L2	93.9	93.7	0.22
L3	93.1	93.6	0.51
L4	92.9	93.1	0.20
L5	93.0	93.5	0.51
S1	94.9	94.7	0.15

FAHRENHEIT

Standard Deviation: +1 +2 +3



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Autopsy of a Pickle

Materials Needed (per pair of students):

- dill pickle
- tray or plate
- personal protective equipment (goggles, mask, gown or apron)
- toothpicks and marshmallow (optional)
- drape (or napkin)
- scalpel (or sharp knife)
- ruler
- scale
- suture material (or thread and needle)
- pH test kit (or soil pH test kit)

Procedure:

Each student will be a Forensic Pathologist for a day! A trip to the morgue will help to build suspense for the autopsy they will perform.

The instructor should be dressed in "scrubs" and wearing gloves and eye gear as the students enter the classroom. The demonstration table in the front of the class should have the "pickle body" ready for an autopsy (insert toothpicks for arms and legs and use one to attach a marshmallow head if desired!) and covered with a drape to build suspense.

Review the body directions terminology and the function of dissecting equipment. Have students take notes.

Hand out pickles, trays, and dissecting equipment to partners. Have students make a body out of the pickle with marshmallow and toothpicks if desired. Have students follow the instructions to begin their autopsy. Imagination is the key!

*Cross Reference - Health Unit, Disease Prevention

Date: ____________________ Time: __________

Dr. ______________________ (attending Pathologist)

1. Examine the body for any external abnormalities. Note moles, scars, shape, size, and coloration. Record the "gross assessment."

2. Draw an anterior and posterior view of the "person," adding the details noted in the physical assessment in question 1.

3. Record the weight and length in inches and lbs/oz.

4. Convert the length from inches to centimeters and the weight from lbs/oz to kilograms.

5. Open the ventral cavity using a scalpel. Begin with a "Y" incision at each arm and continue to the sternum. Continue with a single incision from the sternal area to the pubic area. Identify the contents and record your findings (be creative!).

6. Perform a medial to lateral incision from the single cut in the sternal area down the sides of the specimen. Perform another incision from the umbilical area on both sides as above and open the abdominal cavity. Remove the organs for examination. Record your findings.

7. Determine the pH of the specimen. Remember that normal body pH is 7.35-7.45. Record the pH and note if it was normal or abnormal.

8. Record the cause of death. Describe in detail why the diagnosis was made based on your findings. Include a profile of the disease or medical condition you selected as your diagnosis (definition, etiology, signs/symptoms, treatment, prognosis, etc.). Refer to Appendix, p. 113-116 for reference material.

Hearing Activities

Purpose: To demonstrate the function of the ear and how it relates to hearing and our sense of balance and equilibrium. The auditory nerve can be tested by bringing a ticking watch or clock closer to the ear until it can be heard.

Equipment Needed: Watch or Clock, Tuning Fork, Two Coins or Small Bell, Cotton Balls, Hearing Worksheet.

Activity 1:
Directions: One partner should close their eyes while the other partner holds either the watch or clock to the side of their head. Move the watch or clock toward to the ear until it can be heard--stop. Fill in the worksheet.

Activity 2:
Directions: One partner should close their eyes. Other partner should strike the tuning fork against the heel of their hand. Press handle up to your partner's forehead—fork should be sticking out straight from the forehead. Fill-in worksheet.

Activity 3:
Directions: One partner should plug one ear with a cotton ball to simulate a type of deafness in the middle ear. This will still allow the sound to be heard through the bone in the plugged ear. Repeat activity #2. Fill-in worksheet.

Activity 4:
Directions: One partner close eyes. Other partner should click two coins together or ring a small bell at various places around the head. Partner with eyes closed should point to where they think the sound is coming from. Fill-in worksheet.

Activity 5:
Directions: One student bends over at the waist and spins around in a circle several times, then tries to stand up. Fill-in worksheet.

***Caution:** Be careful that the student is not allowed to fall over. Create a circle of students around the spinning student to prevent a fall.

* Cross Reference—Health Unit, Gaining and Maintaining Physical Fitness

Hearing Activity Worksheet

Activity 1:

1. Measure the distance with a ruler and record.

2. Repeat the procedure with the other ear. Record the distance.

3. Are the distances the same? Yes No

   If not, what could be the cause?

4. If a person could not hear the ticking watch (clock) in one ear—what could be the problem?

Activity 2:

1. Where does the sound appear to come from?

2. With the tuning fork placed on the forehead, which ear should pick up the sound?

   Why would you assume this?

Activity 3:

1. Which ear picked up the sound of the tuning fork?

2. A person can suffer a hearing loss in which the ear can still hear, but not as well as the other ear. What could be the cause of this?

Activity 4:

1. When was it easier to distinguish where the sound was coming from?

2. When was it difficult to distinguish where the sound was coming from?

3. People may sometimes have trouble telling where sounds are originating from—how do we see them compensating for this?

   How do they try to hear better?

Activity 5:

1. Describe how if felt immediately after spinning?

2. The fluid in the semicircular canals of the inner ear inform us of our position—When a person spins around, what happens to this fluid?

3. When you stopped spinning, why did you feel as you did?

Solving Crimes With Forensics

Purpose: This activity will generate awareness of the area of forensics as it relates to diagnostic service careers. It assists the learner in researching forensic medicine used in solving crimes by developing a scenario.

Activity Suggestions:

* View a TV Program dealing with forensic medicine.
Example—CSI, Medical Detectives, etc.
Time Required—Varied

* Class Presentation about forensic medicine.
Time Required—One Class Period

* Working in Teams, Research forensic medicine and it's use in crime prevention.
Time Required—Varied

* In Teams/Small Group—Create a crime scenario in which the crime can only be solved based on forensic evidence. (Fingerprints, blood samples, hair, etc.). Create a mock crime scene to go with the scenario. Have students try to solve the case.
Time Required—Two Class Periods

* In Teams present the scenario and a mock crime scene to another group for solving.
Time Required—One Class Period

*Cross references—Health Unit, Disease Prevention

Therapeutic Services C

Middle School

LEARNING OBJECTIVES

- explain the meaning of the term "therapeutic services"
- list therapeutic services careers
- differentiate between various therapeutic services careers
- identify traits and skills of therapeutic services workers
- compare personal traits and skills to those of therapeutic services workers

STUDENT ACTIVITIES

Day 1	***Time Required***
Review "**Therapeutic Services**" (page C-51) overhead and "**Sample Occupations in Each Service Area**" (page A-9) chart.	10 minutes
Experience what it takes to increase muscular strength by completing the "**Flex Your Muscles**" (page C-52) activity. Refer to "**Sample Occupations in Each Service Area**" (page A-9).	15 minutes
Experience what it may be like to have a disability in "**The Paper Airplane**" (page C-53) activity.	30 minutes
See what it may be like to experience respiratory distress with the "**I Can Breath**" (page C-54) activity.	15 minutes

Day 2	***Time Required***
Examine skills needed for the therapeutic field with the "**Acting It Out**" (page C-55) activity.	1 day=30-40 min. (preparation and skit) or 2 day=1st day prep 15-20 minutes, 2nd day 15-20 minutes skit
Listen to a speaker within the Therapeutic Service Field using the "**Guest Speaker Invitation**" (page C-56) sheet, and the "**Presentation Summary Form**" (Appendix 123-124). "**Research a Health Career and Interview Questions**" (Appendix 122).	40 minutes

Therapeutic Services C

High School

LEARNING OBJECTIVES

- explain the meaning of the term "therapeutic services"
- list therapeutic services careers
- differentiate between various therapeutic services careers
- identify traits and skills of therapeutic services workers
- compare personal traits and skills to those of therapeutic services workers

STUDENT ACTIVITIES

Day 1	*Time Required*
Review "**Therapeutic Services**" (page C-51) overhead and "**Sample Occupations in Each Service Area**" (page A-9) chart.	10 minutes
Discuss injuries during the "**Famous Sports Injuries**" (page C-58) activity.	10 minutes
Investigate different Therapeutic Careers in "**To Whom It May Concern**" (page C-57) activity.	15-20 minutes

Day 2	*Time Required*
Compare different therapeutic careers using the "**Research A Health Career**" (Appendix 122) and/or "**Comparing Careers Form**" (Appendix 125).	1 day=research and write up, 45 minutes or 2 day = 1 day research, 45 minutes and 1 day write up & discuss results, 45 minutes
Investigate mental therapeutic services by completing "**A Day in the Life of . . .**" (page C-59) activity.	20 minutes
Listen to a speaker in the Therapeutic Service Field using the "**Guest Speaker Invitation**" (page C-56), "**Research a Health Career and Interview Questions**" (Appendix 122), and the "**Presentation Summary Form**" (Appendix 123-124).	40 minutes

Workers in this field "treat" patients to improve or maintain the health of clients over time. They also provide rehabilitation services to help people overcome or adjust to physical, developmental or emotional disabilities.

G
O
A
L

Get the patient to be able to function at maximum capacity.

Arm Flex and Overload

Concept/Description:
A muscle will become stronger only if it is worked at higher than normal levels.

Careers in the therapy field may require you to help maintain or improve the physical strength of your patient. Patients may need to improve their muscular strength to overcome or adjust to physical disabilities that may be related to genetic or accidental ailments.

Objective:
Students will understand the overload principal as it applies to acquiring muscle strength

Materials:
Books or other heavy items that can be held in a student's hand

Directions:
1. Students will stand and rapidly flex one of their arms for two minutes.
2. Students will then put a book or other heavy object in the hand of their other arm and repeat the two-minute exercise.
3. The teacher will discuss why the second arm became tired sooner and explain the benefits to the overloaded muscle.
4. The student will then be guided in sharing ideas about why it is important to overload a muscle to build strength.
5. Name several therapeutic careers which use the overload principle as part of their treatment and explain.

Cross Reference: Gaining and Maintaining Physical Fitness
Health Education Required Content

The Paper Airplane

Concept/Description:
Many therapists have to work with patients that have experienced a disability. It is important to experience what a disability may be like and how it would be to deal with it in everyday life.

Objective:
Students will experience what it would be like to have a disability/injury.

Materials:
Blindfold, Cravat or Rope, Tape, Glue, Scissors, Paper, Markers. (Athletic tape works well for taping fingers)

Directions:

1. Divide the students into groups of four or five. Assign each student in the group a disability/injury from the list below:

   List Of Disabilities:

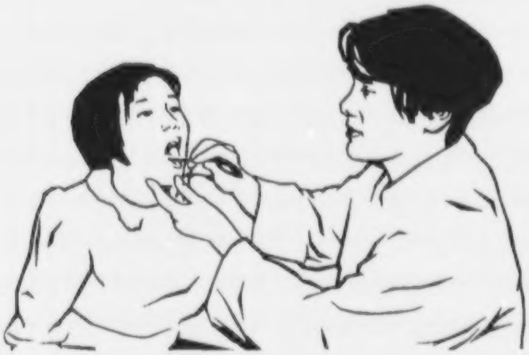
   A. On both hands, tape one student's thumb and pointing finger together.
   B. Tie one student's dominant arm behind his/her back.
   C. Blindfold one student.
   D. Tie both arms of one student behind his/her back.
   E. Tell one student he or she cannot speak.
2. Give each group construction paper, scissors, tape, glue, and markers.
3. Instruct them to make a paper airplane of any kind while dealing with their assigned disabilities.
4. Give the group 15-20 minutes to complete the assignment.
5. Have each group share their airplane with the class. Discuss the questions listed below relating to the therapy profession.

Questions For Discussion:

A. How did your various disabilities limit you in participating in the paper airplane making?
B. How could a professional in the field of therapy help patients meet the challenges of their disability?
C. How were you able, as an individual, to compensate for your assigned disability?
D. How were you able, as a group, to compensate for the various disabilities?

Cross Reference: Relationships
Health Education Content Requirements

I Can Breath!



Concept/Description:
One of the many therapeutic services includes respiratory therapy. Respiratory therapists work with patients with respiratory problems, including breathing deficiencies.

Objective:
Students will experience what it would be like to experience a breathing deficiency.

Materials:
Straws of different sizes may be used. You will need one straw for each student.

Directions:

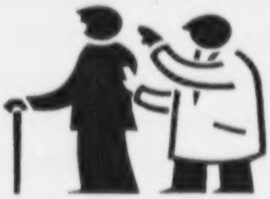
1. Have students try breathing through a straw with their nose plugged.
2. Have a discussion about the problems with this experience and their feelings about the lack of air flow.
3. Discuss the kinds of things that may lead to respiratory distress? e.g., emphysema (difficulty exhaling), accidents, asthma, pneumonia, lung cancer, etc.
4. What things may cause some of these problems?

Cross-reference: Alcohol/other drugs and Disease Prevention
Health Education Required Content

Acting It Out? Therapeutic Careers

Concept/Description:
A career can be understood better if one knows what skills are required to be successful in that career.

Objective:
Students will learn about a health career in depth in order to demonstrate the work that is required.



Materials:
Any items students need to perform their skit.

Directions:
1. Divide the students into groups of three or four.
2. Each group will select a health career in the therapeutic field.
3. Set up a stage in your classroom or use the school auditorium if it is available.
4. Have each group present a skit that demonstrates a therapeutic health career. (Encourage students to use props to aid them in their performance)

Guest Speaker Invitation

Invite a guest speaker to your classroom to speak on a health career in the therapeutic field.

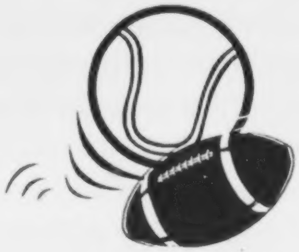
Some commonly asked professionals would include:

- **Physical Therapists**
- **Nurses**
- **Chiropractors**
- **Veterinarians**
- **Dental Hygienists**

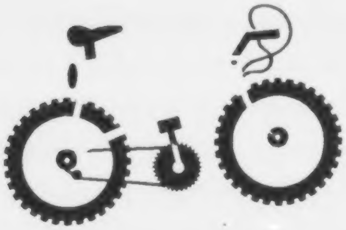
See appendix for a listing of "Interview Questions," "Research A Health Career," and the "Presentation Summary Form."

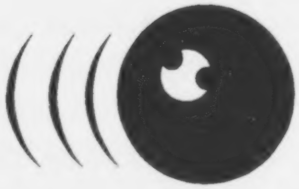
Famous Sports Injuries

Good Introductory Activity to start thinking about therapeutic health careers.

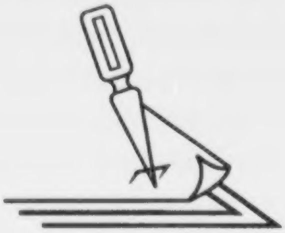


Directions:
Have students recall famous athletes or student athletes who have sustained a sport related injury and have required some type of therapy for recovery. Select one student to write the athletes' names on the board as the class calls them out. Discuss the types of injuries sustained and therapy required.





To Whom It May Concern:



Concept/Description:
There are many health organizations that are available as resources for finding out information about health careers.

Objective:
Students will investigate particular health organizations and request information about careers. You may run an extended project and ask the students to present the information they found to the other students in the class.

Materials:
Writing utensil, paper or computer.

Directions:

1. Supply students with a list of health organizations from the appendix. They may also investigate the web site wihealthcareers.org for more organizations.
2. Have each student write to one or two organizations requesting information and asking about the different health careers that are available.

Optional:

3. Have the students share their information with the class.

Concept/Description:
Some patients may need to receive mental therapeutic services. Some of these professions include: counselor, human services worker, psychologist, or social worker.

Objective:
Students will describe how they could help individuals cope with different life circumstances from the perspectives of different mental health professionals.

Materials:
Writing utensil and paper. Discussion of what different mental health careers are.

Directions:

1. Have students select one of the individuals from the list below. Have them write a brief description of what a typical day in the life of that individual might be. After creating a day in the life of their selection, choose one of the mental health workers below and describe what they could do to help the individual cope with life.

    A. an elderly man living alone
    B. a teenage gang member
    C. a single mother with two children
    D. a woman taking care of her elderly parents
    E. a teenager with a drug habit

2. Ask the students how a counselor, human services worker, psychologist, or social worker can help this individual?

Cross Reference: Relationships
Health Education Required Content

Environmental Services D

Middle School

LEARNING OBJECTIVES

- explain the meaning of the term "environmental services"
- list environmental services careers
- differentiate between various environmental services careers
- identify traits and skills of environmental services workers
- compare personal traits and skills to those of environmental services workers

STUDENT ACTIVITIES

Day 1	***Time Required***
Define Environmental Services. See "**Meaning of Environmental Services**." (page D-65)	5 minutes
Identify Environmental Services careers using "**Sample Occupations In Each Health Care Area**" (page A-9) transparency.	5 minutes
Describe job duties, education required, and yearly earnings. See "**List of Environmental Services Careers**." (page D-66)	15 minutes
Investigate "**Medical Engineering**" (pages D-67 - D-68), completing student notes.	10 minutes
Examine the difficulty of removing "contaminated" gloves. See "**Contaminated Glove**" (page D-69) activity.	10 minutes
Videotape and share a health care professional removing gloves, washing hands, scrubbing for surgery, putting on gloves.	15 minutes
Invite a health career worker to speak on their career, encourage them to bring equipment, materials, models, etc., to the classroom for students to examine or share a demonstration. See "**Presentation Summary Form**" (Appendix 123-124) and "**Interview Questions**" (Appendix 122).	45 minutes

Seek out the Biohazard Policy for your school and report on your findings.	10-20 minutes

LEARNING OBJECTIVES

- explain the meaning of the term "environmental services"
- list environmental services careers
- differentiate between various environmental services careers
- identify traits and skills of environmental services workers
- compare personal traits and skills to those of environmental services workers

STUDENT ACTIVITIES

Day 1	***Time Required***
Select any Middle School activities.	Time varies
Illustrate the spread of germs, by completing the **"Black light/Germ Search"** activity (page D-70).	15 minutes
Assess student's knowledge about infection control by completing **"Spread the Knowledge, Not the Germs!"** (pages D-71 - D-73). (Reference to the WI Health Education Standard on Nutrition).	20 minutes
Discuss and show **"Personal Protective Equipment"** (page D-74) used in health care.	15 minutes
Have a student demonstrate how to put on a sterile gown and discuss which health careers use this personal protective equipment. See **"Personal Protective Equipment"** (page D-74).	10 minutes
Research the career of your choice by reading about it in a variety of references. See **"Research a Health Career"** (Appendix 122), **"Health Organizations Listing"** (Appendix 111-112), **"Health Occupations Websites"** (Appendix 113-116) and **"Comparing Careers Form"** (Appendix 125).	30-90 minutes

Interview a person in the health career of your choice. (See "**Research a Health Career**" (Appendix 122).	15 minutes
Invite a guest speaker to present their health career to the class.	45 minutes
Show videotape on health careers, check with local guidance counselors, hospital education/library, professional organizations, etc. Some suggestions: ***Careers in Health Care,*** 24 minute videotape, available from the Marshfield Hospital, Education Office. ***Choices***, available from MATC (Milwaukee Area Technical College). ***So Many Choices: Careers in Health Care***. 24 minutes, features many hospital health careers, available from Kaiser Permanente, Audiovisual Services, 825 Colorado Blvd., Los Angeles, CA 90041. Program #5445, 1999.	15-45 minutes

Meaning of Environmental Services

Environmental Services includes workers in the health occupations that are involved with creating a therapeutic environment to provide direct or indirect client care. This includes environmental operations (the running of the health site facility), aseptic procedures (methods to prevent the spread of germs or pathogens), resource management (the management of equipment, people, space, and time) and aesthetics (creating pleasant work and treatment area).

List of Environmental Service Careers

Occupation	**Education Required**	**Average Yearly Earnings**
Biomedical Engineer	Varied	Varied
Biomedical Equipment Technician	Assoc. or Bachelor's	$19,300-37,400
Central/Sterile Supply Worker	On-the-job + class cert.	$11,200-20,500
Dietitian	Bachelor's Degree; Registration of ADA	$23,300-54,800
Dietetic Technician	Associate Degree	$20,200-41,300
Dietetic Assistant	On-the-job; 1 year food service vocational program	$11,200-18,300
Health Care Administrator	Usually Master's Degree	$48,500-196,000
Housekeeping Worker/ Sanitary Manager	On-the-job; 1 year technical	$11,200-21,800

Medical engineering professionals are often referred to as health care detectives. They help solve medical problems, repair faulty equipment, and design needed equipment such as thermometers, heart pacemakers, and new devices to replace bones or joints. These professionals include: biomedical engineers, biomedical equipment technicians, and industrial hygienists. Their work involves precise and exacting detail, and offers challenges and new discoveries. Their work makes the health environment safer and disease-free for patients and employees. If you enjoy working with machinery you might be interested in medical engineering.

Information sheet:

Biomedical Engineer:

1. Works with all areas of health care to improve patients' quality of life by combining expertise in engineering and science, to create solutions to patients' problems.
2. Uses computers to simulate body parts and design wonders like heart pacemakers, artificial kidneys, valves for hearts, joints and blood vessels.

Biomedical Equipment Technician:

1. Installs new equipment and adjusts, inspects, cleans, and tests equipment for proper operation. Performs safety inspections on equipment that uses electricity and /or radiation.

Industrial Hygienist:

1. Searches for hazards, diseases, and hidden dangers in the work place, and suggests ways to eliminate them.
2. Helps to establish regulations by conducting surveys to determine exposure to harmful physical substances.

Medical Engineering Student Notes

Biomedical Engineer:

1. Works with all areas of health care to improve patients' quality of life by combining expertise in ______ ______________ and science, to create solutions to patients' problems.

2. Uses computers to simulate body parts and design wonders like heart ________________, artificial kidneys, valves for hearts, joints and blood vessels.

Biomedical Equipment Technician:

1. Installs new __________________ and adjusts, inspects, cleans, and tests equipment for proper operation and performs safety inspections on equipment that use electricity and /or radiation.

Industrial Hygienist:

1. Searches for hazards, diseases, and hidden dangers in the __________________, and suggests ways to eliminate them.

2. Helps to establish __________________ by conducting surveys to determine exposure to harmful physical substances.

Contaminated Glove

Materials needed:
Gloves
Catsup or barbecue sauce (fake blood)

Have students dip their gloved hands into the fake blood. Carefully, remove the glove without getting any of the "blood" on their hands.
The trick is to fold down the inside "clean" surface over the contaminated outside surface of one hand, pulling it half way down so the fingers are still gloved. Then use the gloved fingers of that half-gloved hand to grasp the top outer edge of the second dirty glove and pull it down inside out. Pull them off slowly to prevent spatters.
Were they successful in not getting anything on their hands, face, table, etc.?
What are the possible consequences if the "blood" does get on their skin or other surfaces?

Black light / Germ Search

Materials:
Glo Germ Kit: available from NASCO 1-800-558-9595 WA19099H@$41.70
Black light
Fluorescing liquid or powder

Help students understand the importance of proper hand washing, isolation techniques, aseptic techniques, and general infection control. The oil or powder simulates "germs," and the lamp lets you become the "germ detective." For hand wash training, the oil is applied to the hands like hand lotion. This spreads thousands of tiny fluorescent "germs" on the hands. After normal hand washing is finished, the fluorescent lamp may be used to spot the remaining "germs"—they glow bright and are easily seen. Powder can be used to show surface contamination and transfer of "germs" from utensils and surfaces to hands and clothing.

All health care employees must practice infection control procedures to prevent the spread of germs and bodily fluids from patient-to-patient, patient-to-employee, employee-to-community, and vice versa. This concept relates to the WI Health Education Standard of Disease Prevention.

Spread the Knowledge, Not the Germs!

Ahead of time:
Copy "*Spread the Knowledge, Not the Germs!*" for each student.

In class:
Tell the students to see if they know the answers to the following questions. When they are finished, go over each question and explain the correct answer.

Cross Reference: Wisconsin Health Education Standards on Nutrition

Spread the Knowledge, Not the Germs!

Directions: Circle the best answer(s).

1. What is the best way to prevent the spread of infection and germs?
   a. Showering twice a day.
   b. Hand washing.
   c. Ironing your clothes.
   d. Brushing your teeth.

2. Circle the following times in a day when hand washing should be done:
   a. Before eating.
   b. After using the bathroom.
   c. Before going to bed.
   d. Before invasive procedures.
   e. After patient contact.
   f. After blowing your nose.
   g. After handling contaminated articles.
   h. Before boarding the bus.

3. Identify proper hand washing techniques:
   a. Clean under your nails.
   b. Use soap and work up a lather.
   c. Turn off the faucet before drying your hands.
   d. Take rings and jewelry off before washing.
   e. Wet your comb or brush with your hand, and then comb your hair.
   f. You don't have to hand wash after using the restroom every time.
   g. Apply friction to all surfaces and use warm water.
   h. Use a paper towel to turn water on and off.

4. What is a nosocomial infection?
   a. One that is hospital-acquired.
   b. One that you have when you enter the hospital.
   c. One that lives in your nose.
   d. One that is acquired at school.

5. Two sources of infection in the hospital environment include:
   a. The smoking area.
   b. The pink volunteers.
   c. Candy and snacks.
   d. Trash and patient rooms.

6. Which is **not** a major vehicle for infection transmission?
   a. Food.
   b. Water.
   c. Car.
   d. Drug usage.
   e. Sex.
   f. Blood.

7. A "Chain of Infection" must include the following three links:
   a. Host.
   b. Source of infection.
   c. A way to get into the body.
   d. Immunization or vaccine.

8. Identify the types of patients who are more susceptible to infection:
   a. Elderly.
   b. Newborn.
   c. Teenager.
   d. Diabetic.
   e. Child.

Spread the Knowledge, Not the Germs! Key

Answer Key

1. What is the best way to prevent the spread of infection and germs?
   a. Showering twice a day.
   b. **Hand washing**.
   c. Ironing your clothes.
   d. Brushing your teeth.

2. Check the following times in a day when hand washing should be done:
   a. **Before eating.**
   b. **After using the bathroom**.
   c. Before going to bed.
   d. **Before invasive procedures**.
   e. **After patient contact**.
   f. **After blowing your nose**.
   g. **After handling contaminated articles**.
   h. Before boarding the bus.

3. Identify proper hand washing techniques:
   a. **Clean under your nails**.
   b. **Use soap and work up a lather**.
   c. Turn off the faucet before drying your hands.
   d. **Take rings and jewelry off before washing (if possible).**
   e. Wet your comb or brush with your hand, and then comb your hair.
   f. You don't have to hand wash after using the restroom every time.
   g. **Apply friction to all surfaces and use warm water**.
   h. **Use a paper towel to turn water on and off**.

4. What is a nosocomial infection?
   a. **One that is hospital-acquired**.
   b. One that you have when you enter the hospital.
   c. One that lives in your nose.
   d. One that is acquired at school.

5. Two sources of infection in the hospital environment include:
   a. The smoking area.
   b. The pink volunteers.
   c. Candy and snacks.
   d. **Trash and patient rooms**.

6. Which is **not** a major vehicle for infection transmission?
   a. Food.
   b. Water.
   c. **Car**.
   d. Drug usage.
   e. Sex.
   f. Blood.

7. A "Chain of Infection " must include the following three links:
   a. **Host**.
   b. **Source of infection**.
   c. **A way to get into the body**.
   d. Immunization or vaccine.

8. Identify the types of patients who are more susceptible to infection:
   a. **Elderly**
   b. **Newborn**
   c. Teenager
   d. **Diabetic**
   e. Child

Personal Protective Equipment

Personal Protective Equipment (PPE) are barriers used in standard precautions and infection control. They prevent bodily fluids and germs from spreading or entering the health care worker. These would include the following: masks, eye shields, gowns, gloves, shoe covers, hair covers, goggles, etc.

Many of these items are one-use or disposable items. Many health care facilities will provide these items upon request for teaching purposes. Contact the manager of Sterile/Materials Management and they may be able to save these items for you when a surgical case is cancelled at the last minute. Once a sterile disposable item's packaging is opened, it cannot be reused.

Information Services

E

Middle School

LEARNING OBJECTIVES

- explain the meaning of the term "information services"
- list information services careers
- differentiate between various information services careers
- identify traits and skills of information services workers
- compare personal traits and skills to those of information services workers

STUDENT ACTIVITIES

Day 1	*Time Required*
Define information services using terminology concepts - **"Break It Down"** (page E-79) worksheet.	5-10 minutes
Identify information services careers and key terms - **"Search Me!"** (page E-81) puzzle.	10-20 minutes
Compare information services careers - **"Who am I?"** (page E-83) activity (choose to either present or develop posters)	30-75 min.-develop 10-15 min-discuss
Assess personal characteristics related to information services careers - **"Do You Have What It Takes?"** (page E-84) worksheet report on your findings.	10-15 min-worksheet 20 min-discussion
Day 2	*Time Required*
Identify information services skills and environments with a tour of a health insurance facility. Plan ahead by sharing the **"Information Services Scavenger Hunt"** (page E-85) activity with your tour guide. Discuss the materials gathered and how they relate to career duties upon return to school.	during a 1-2 hour tour
Differentiate between various information services workers and roles in **"Information Services Charades"** (page E-86) activity.	5-10 minutes per career

Read "**Observe, Record, Report**" (page E-87) and practice correcting written errors – "**Broken Record**" (page E-91)	10-15 minutes
Practice using a variety of filing systems – "**I Can File!**" (page E-93)	10-15 minutes
Practice phone skills using one or more of the scenarios given – "**Hello?**" (page E-89)	5-20 minutes

Information Services

E

High School

LEARNING OBJECTIVES

- explain the meaning of the term "information services"
- list information services careers
- differentiate between various information services careers
- identify traits and skills of information services workers
- compare personal traits and skills to those of information services workers

STUDENT ACTIVITIES

Day 1	***Time Required***
Define information services using terminology concepts - "**Break It Down**" (page E-79) worksheet.	5-10 minutes
Compare information services careers - **"Who am I?"** (page E-83) activity.	30-75 min.-develop 10-15 min-discuss
Assess personal characteristics related to information services careers - **"Do You Have What It Takes?"** (page E-84) worksheet.	10-15 min-worksheet 20 min-discussion
Day 2	***Time Required***
Identify information services skills and environments - **"Information Services Scavenger Hunt"** (page E-85) activity.	as an extra credit challenge
Differentiate between various information services workers and roles in **"Information Services Charades"** (page E-86) activity.	5-10 minutes per career
Internalize the importance of information services workers responsibilities - discussion of **"Who's Reading Your Medical Records?"** (pages E-97 - E-99) article.	20-30 minutes
Compare personal traits and values to those needed in an information services career - **"What Do You Think?"** (page E-101) discussions.	15-20 minutes per topic

Become aware of the world of health insurance - "**Family Insurance Survey**." (page E-95)	Review a policy as a large group (20 min.) or assign as extra credit enrichment
After reading "**Observe, Record, Report**" (page E-87), practice correcting written errors – "**Broken Record**." (page E-91)	5-10 minutes
Practice using a variety of filing systems - "**I Can File!**" (page E-93)	10-15 minutes
Practice phone skills using one or more of the scenarios given - "**Hello?**" (page E-89)	5-20 minutes

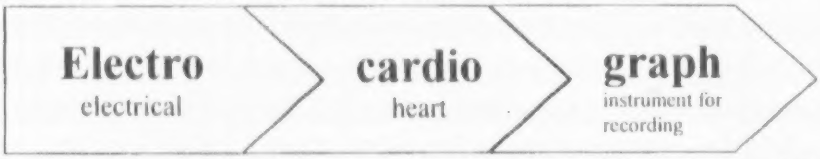
Break It Down

Medical terminology is used by health care professionals to communicate clearly about a patient's condition and health care needs. Medical terms are built from four types of word parts: prefixes, root words, connecting vowels, and suffixes. Understanding each of the word's parts helps you to understand the whole word.

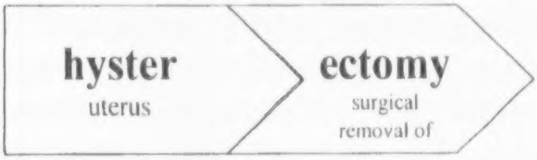
Prefix
Root
Suffix

Prefix – the beginning of a term, adding to the meaning of the root word.
Root word – the main subject of the term, usually a noun.
Connecting vowel – makes the word easier to pronounce.
Suffix – the end of a term, adding to the meaning of the root word.

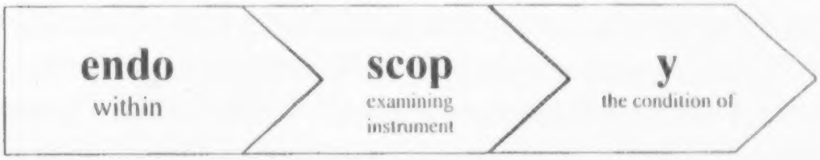
Follow the model below to define these words:


Electro
electrical
cardio
heart
graph
instrument for recording

Electrocardiograph – instrument for recording the electrical pulses of the heart.

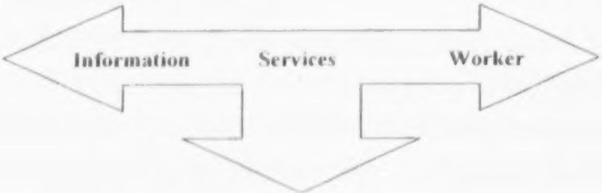

hyster
uterus
ectomy
surgical removal of

Hysterectomy - ?


endo
within
scop
examining instrument
y
the condition of

Endoscopy - ?

The same idea can be used to understand terms in our everyday life. Use this concept to help understand the meaning of "information services worker." A dictionary may be used.


Information
Services
Worker

BEST COPY AVAILABLE

Break It Down Key

Medical terminology is used by health care professionals to communicate clearly about a patient's condition and health care needs. Medical terms are built from four types of word parts: prefixes, root words, connecting vowels, and suffixes. Understanding each of the word's parts helps you to understand the whole word.

Prefix > **Root** > **Suffix**

Prefix – the beginning of a term, adding to the meaning of the root word.
Root word – the main subject of the term, usually a noun.
Connecting vowel – makes the word easier to pronounce.
Suffix – the end of a term, adding to the meaning of the root word.

Follow the model below to define these words:

Electro	**cardio**	**graph**
electrical	heart	instrument for recording

Electrocardiograph – instrument for recording the electrical pulses of the heart

hyster	**ectomy**
uterus	surgical removal of

Hysterectomy - ***surgical removal of the uterus***

endo	**scop**	**y**
within	examining instrument	the condition of

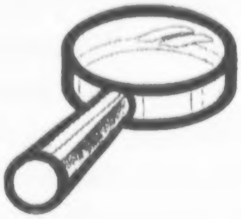
Endoscopy - ***instrument for examining conditions from inside the body***

The same idea can be used to understand terms in our everyday life. Use this concept to help understand the meaning of "information services worker." A dictionary may be used.

Information **Services** **Worker**

Person who works behind the scenes with limited patient contact, gathering and analyzing data from a variety of sources and providing organized communication of information. This allows other health care workers to do their jobs more effectively.

Search Me!



Find the terms from the word list hidden in the puzzle, then match them to their definitions at the bottom of the page.

```
K C P M Z L W F K M C K E C K
R W O F I L E C L E R K W O X
E A N D G L Z J K I L U F N D
L Y D O I Y Z F M X L E U F T
C B D M I N S T X M L P O I W
T I C P I T G H P X W T L D Q
I P K U G N A B H K O L A E F
N L J Y Q Y I T Z A U T T N B
U N O S N L Y S C S O I F T H
A B B R E V I A T I O N S I Q
U X I N P M Y R W R D Y I A C
S U Z G D D A I K P A I A L H
P J H S A T S O A Y Q T W D A
W M T R O V Y O A Z L O O L R
I Q P R Z E B I R C S N A R T
```

____**Transcribe**

____**Coding**

____**Dictation**

____**Illustrator**

____**Chart**

____**Unit Clerk**

____**Abbreviations**

____**Administrator**

____**Confidential**

____**File Clerk**

a. collection of written documents relating the health care of a client

b. manages the facility operation (personnel, finance, policies, etc.)

c. obtains, returns, and organizes files in correct order

d. private and secret, information that may be protected by law

e. spoken or recorded words that are written by another person

f. make a written copy of spoken or recorded information

g. review charts to assign specific numbers/ letters based on diagnosis

h. handles computer records, schedules, telephones, supply orders, etc

i. creates graphics for books, pamphlets, exhibits, etc.

j. a shortened way to write

Search Me! Key

Find the terms from the word list hidden in the puzzle, then match them to their definitions at the bottom of the page.

```
K C                       C
R   O F I L E C L E R K   O
E A N D                   N
L   D O I                 F
C     M I N               I
T       I T G           L D
I         N A         L   E
N           I T     U     N
U             S C S       T
A B B R E V I A T I O N S I
              R   R D     A C
            A       A     L H
          T           T     A
        O               O   R
      R   E B I R C S N A R T
```

f	**Transcribe**	a.	collection of written documents relating the health care of a client
g	**Coding**	b.	manages the facility operation (personnel, finance, policies, etc.)
e	**Dictation**	c.	obtains, returns, and organizes files in correct order
i	**Illustrator**	d.	private and secret, information that may be protected by law
a	**Chart**	e.	spoken or recorded words that are written by another person
h	**Unit Clerk**	f.	make a written copy of spoken or recorded information
j	**Abbreviations**	g.	review charts to assign specific numbers/ letters based on diagnosis
b	**Administrator**	h.	handles computer records, schedules, telephones, supply orders, etc
d	**Confidential**	i.	creates graphics for books, pamphlets, exhibits, etc.
c	**File Clerk**	j.	a shortened way to write

Who Am I?

Directions:

1) Students, working alone or in pairs, research one of the information services careers listed below. Use the "Occupational Outlook Handbook" (available at http://stats.bls.gov/ocohome.htm), Internet (such as http://www.wihealthcareers.org), dictionary, encyclopedia, library, and other available resources for research.
2) Students prepare a brief presentation on their career area:
   a. where it fits into the health care industry (in a hospital, insurance company, etc)
   b. what type of environment they work in (noisy office, small cubicle, bright lab, etc.)
   c. what kinds of duties they have (phone calls, paperwork, calculating figures, etc.)
   d. type of training needed (on-the-job training, associate degree, master's degree, etc)
   e. how much they earn
3) Information may be shown with pictures, graphs, and comparisons to other familiar careers, i.e.,
   a. **A diagram or flow chart** of where the Health Care Administrator fits into the organizational structure of a nursing home.
   b. **Pictures** to show the type of environment they work in.
   c. **Comparing** a Health Care Administrator to a High School Principal in terms of patient/student contact, tasks, salary, and work environment.
   d. **A pie chart** can show how many Information Processing Consultants there are at each level of training. Variation is common when following a "career ladder" up to higher levels along a career path.
   e. **A bar graph** can be used to compare earnings of Medical Illustrators to nurses, advertising specialists, or even photographers!

   *** If students will be doing the "What's My Line" activity with the same career titles, do not put student names on the front of the posters.
4) As a class, discuss what information services careers are all about. What purpose do they serve in health care? How are they similar to or different from other types of health care careers? Why are they an important part of health care?

Career List:

Accredited Record Technician
Accounts Payable and Receivable Clerk
Admitting Clerk
Bookkeeper
Clerical Supervisor
Data Entry
File Clerk
Health Care Administrator
Health Information Technician
Health Science Librarian
Hospital Architect
Information Processing Consultant
Inventory Clerk
Medical Coder
Medical Illustrator
Medical Photographer
Medical Records Clerk
Medical Secretary
Medical Transcriptionist
Medical Writer
Payroll Clerk
Personnel Director
Public Health Educator
Public Relations Director
Receptionist
Unit Secretary

Do You Have What It Takes?

Picture yourself on the job as an information services worker. Draw from your past work and life experiences, such as times when you've visited the doctor's office.

Directions:

A. Have a friend secretly rate you by filling in the first column with either:
"Beginner" (This is a skill I have not yet developed)
"Novice" (This is a skill I would need more practice with)
"Expert" (This is a skill I would be very good at)

B. Next, fold under the left edge of the page so your friend's responses are on the back of the page where you cannot see them (no peeking!).

C. Now, use the second column to rate yourself on the same scale (Beginner, Novice, or Expert). Be honest!

D. Finally, compare your responses with those in the first column. Discuss together: Do you think you give others the wrong impression of yourself at times? How do you think this happens? Does it really matter? When does it matter most? What could you do to improve?

1. ______ 1. ______ 1. I am committed to quality and doing the best job I possibly can, even with dull and tedious tasks.

2. ______ 2. ______ 2. I am a very organized person. I like it when everything has a place and is in its place.

3. ______ 3. ______ 3. I am very dependable. People can always count on me to do what I say I will.

4. ______ 4. ______ 4. I am always on time, or even a little early, when reporting to work, going to class, or meeting a friend.

5. ______ 5. ______ 5. I am interested in and constantly trying to learn new things about my job. People think of me as very competent.

6. ______ 6. ______ 6. I am comfortable using computers to complete projects.

7. ______ 7. ______ 7. I can always be trusted with confidential information; I'm not the kind of person who gossips.

8. ______ 8. ______ 8. I have excellent communication skills. I speak clearly and have self-control in both verbal and non-verbal communication.

9. ______ 9. ______ 9. I respect the rights and beliefs of all individuals, even those I do not agree with.

Information Services Scavenger Hunt

Information Services workers in the health care industry are found in hospitals, clinics, research centers, public health departments, long-term care facilities, colleges, law firms, and insurance companies. They are responsible for maintaining records, organizing and storing information, extracting information for claim processing, compiling statistics, scheduling, communicating information from one facility to another, and many other essential tasks that keep a health care facility running smoothly. This activity will help you to become more familiar with some of the tasks an information services worker does as well as taking you to places where information services might occur.

Directions:

1) Your job (individually or as a small group) is to acquire as many of the following items as possible by the assigned due date/time. The more time you have, the more opportunity you have to seek out new sources to complete your list.

2) As you find each item, either attach it to this worksheet or write in the answer in the space provided. Then have the person providing the information sign your sheet and write in their job title.

Scavenger Hunt Items:

Piece of letterhead paper (does not have to be blank)________________

Phone message slip________________________________

Appointment reminder card____________________________

Copy of Appointment Schedule sheet with names blacked out____________

Name of the computer program used for scheduling appointments__________

Job opening announcement in health care____________________

Copy of a supply order or order form______________________

Insurance claim form________________________________

Provider claim form ________________________________

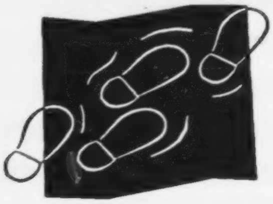
Third-party liability form______________________________

Statistical Data Sheet (Patient Information Form)________________

Medical code used to bill for “carpal tunnel syndrome”________________

Copy of an Oath of Confidentiality__________________________

How many secretaries are in the billing department? ________________



E-85

Information Services Charades

Directions:

1) This activity should follow the "Who Am I?" activity (or assign the research as homework). Students may use the same career area they researched in "Who Am I?" or they may draw names again and use the information from classmates to do a different career area.

2) Pairs of students sit in front of the class with any notes they need to correctly answer questions about the career area. One student pantomimes the actions of a person in that career area while the other person focuses on correctly answering classmates' questions. If a student is working alone they may pantomime first, then answer questions.

3) Classmates take turns asking up to 20 yes/no questions in an effort to correctly identify the correct career. Students may be given the listing of careers to help in the process of elimination to identify the correct title. Sample questions might include:
    Do you work in a hospital?
    Do you have direct patient contact?
    Do you need a certificate to practice?
    Did you go to a 4-year college to obtain this job?
    Do you answer a lot of phone calls?
    Do you need to use any unusual equipment for your job?
    Is this an entry-level position?

4) Perhaps your teacher will award prizes (candy, points toward a test, privileges, extra credit, etc.) for correct identification of a career within the 20-question limit!

Career List:

Accredited Record Technician
Accounts Payable and Receivable Clerk
Admitting Clerk
Bookkeeper
Clerical Supervisor
Data Entry
File Clerk
Health Care Administrator
Health Information Technician
Health Science Librarian
Hospital Architect
Information Processing Consultant
Inventory Clerk
Medical Coder
Medical Illustrator
Medical Photographer
Medical Records Clerk
Medical Secretary
Medical Transcriptionist
Medical Writer
Payroll Clerk
Personnel Director
Public Health Educator
Public Relations Director
Receptionist
Unit Secretary

Observe, Record, and Report

Documentation is required in any health care setting. Documentation is a record of the patient's progress throughout treatment. Many people may be responsible for documenting information on a single patient. This record provides the information needed for each health care provider to give the care that best benefits the patient. All records must contain the patient's name, age, address, identification number, diagnosis, and physician's orders. Depending on the department where the record is kept, other information may also be required. Each health care worker who cares for the patient makes a notation on the chart. These notations should contain specific information about the patient. These include care or treatment given, time of treatment, how the patient tolerated the care or treatment, any observations that would be helpful to other health care workers, and information that the patient has given that would affect treatment. Even if you are not required to chart, you always report your observations for others to chart.

Medical chart documentation is admissible in a court of law. This means that anything you write is considered to be true. If you do not write down something that you did for the patient, it is assumed that it was not done. This could lead to charges of negligence and liability. As you can see, it is very important to be thorough, accurate, and careful when you chart. There are some general guidelines for charting that everyone must follow:

- Use ink for record keeping. In some facilities, different colors are used for different shifts.
- Entries must be **legible** (easy to read). If your writing is difficult to read, you should print.
- Use a dash (-) rather than a slash (/) between words or numbers when necessary.
- If you make an error, do not erase, scratch out, or cover with white out. Draw a single line through the error so that it can still be read, write *error* next to it, then write your initials next to the correction.
- Entries should be in short phrases; complete sentences are not necessary. Entries should be clear, concise, and meaningful.
- You do not need to use the patient's name or the word patient, as the entire chart is about them.
- Do not skip lines or leave blank spaces that others could write in or add information to.
- Your signature follows all entries that you make. Sign with your first initial, your last name, and your title.

There are several standard forms of charting required in most health care facilities. Charts usually begin with a **front sheet** containing personal information such as name, address, marital status, place of employment, and admission diagnosis. A **physical examination** and **medical history** are recorded on forms that vary from one facility to another. **Nurses notes** may be narrative (written out) or check-off. These notes state what care was given, what activities the patient participated in, the patient's skin condition, general observations about the patient, any unusual occurrences, any complaints that the patient has, what treatments were given, and any information that is important to the patient's well-being. The **graphic chart** is a record of the patient's vital signs. All graphic charts have time blocks along one edge and numbers that relate to temperature, pulse, and respiration along the other axis. Some graphic charts also record blood pressure, intake and output, bowel movements, height, and weight. The physician may write **daily progress reports**. Additional parts of the chart might include a **discharge plan, social worker's report**, and **treatment records** from other departments. Any health care worker who deals with filing and compiling records should double-check the records. Documentation is a very important responsibility. Learn how to write good records and always be responsible and careful when you chart or check others' charts for accuracy and completeness.

Hello?

Telephone use is an important part of public relations for any business. The impression you create every time you answer the phone is a reflection on yourself as well as the business that employs you. Answer the phone promptly when it rings, using a greeting and identifying yourself and the business. Speak with a pleasant voice, holding the phone approximately one inch from your mouth. Have a pen or pencil and paper ready for taking a message. Ask how you can help the caller. Be professional, courteous, tactful, diplomatic, and firm, yet flexible. Be prepared to make quick decisions and willing to accept responsibility for your actions. Screen calls and respond appropriately to avoid unnecessary interruptions of your employer while he or she is working. Be sure to get the full name of the caller, their phone number, the date and time of the call, and a brief but complete message. Note any action you took based on the call and place your initials on the bottom of the message for follow up. Remember that a patient's right to privacy prevents you from sharing any personal information or details of their medical records with anyone, even a close family member.

Practice the following telephone scenarios keeping in mind appropriate phone techniques, etiquette, and confidentiality issues. Have a classmate check you using the "Telephone Technique Checklist."

Scenario #1
Both clinic pediatricians are on hospital rounds and not available until 10:00 a.m. and the appointment schedule is already full for the day. The parents of a teenage patient who has been coming to the facility since infancy call at 8:30 a.m. for an appointment later the same day.

"I need an appointment today – right away. My daughter starts basketball tonight and they won't let her play without her form filled out. She's a starter and she just has to play. It'll only take a minute, just a quick physical and a short form – it's nothing really!"

"I know this is last minute, but I just have to have an appointment. Just this once, please! Certainly you can understand our situation, you have to!"

How do you handle this caller?

Scenario #2
The mother of a teenage girl calls and asks to speak to the doctor regarding her eighteen year-old daughter. The doctor is not available so you ask to take a message. She explains that her daughter saw the doctor last week and had some tests done. Her daughter is away at college now and there was a call on the answering machine that the results of her tests were in. She explains that it would be very expensive for her daughter to call long distance and wait on hold (which is typical in this facility). The mother would like to know the test results so that she can relay the message to her daughter.

How do you respond to the mother and what information do you give her?

Scenario #3
A patient calls for an appointment to have a check-up, explaining that they weren't able to make their last appointment and need to reschedule. In checking the schedule you notice that this patient had an appointment last week and didn't show up or call to cancel. There is an opening in approximately two weeks. The patient is willing to accept that time.

What, if anything, do you say in regard to the previous no-show or the importance of keeping scheduled appointments?

Telephone Technique Checklist

Technique	Completed	Redo
1. Answers the phone promptly.		
2. Speaks clearly and with a smile.		
3. Hold the phone against ear and one inch from mouth.		
4. Identifies self and business.		
5. Records first and last name of caller.		
6. Determines who the call is intended for.		
7. Determines the purpose of the call.		
8. Gathers any pertinent background or chart information.		
9. Gives out only information directed by employer, remaining firm and courteous.		
10. Speaks in a clear voice.		
11. Uses correct grammar.		
12. Records message accurately.		
13. Thanks the caller before hanging up.		
14. Determines priority and action for the call.		

Broken Record

Take on the role of a transcriptionist or records clerk; correct the following record, identifying the errors on the blank lines provided.

10/20/01 Ramona Lang 01 087 344.1
Ramona was seen last evening by Dr. Jones
in the Urgent Care with a wite count of
20,000 and a tem. max of 104.
He was noted to have bilateral otitis media
and there rales on auscultation. After some
discussion I sugested placing her on Cefzil
since previous antibiotics were ineffective.
She is much improved this am. Child is
afebrile, not recieving Tylenol. Respiratory
rate is 12 and unlabored. child is alert, well-hydrated, nontoxic and smileing during exam.
Parents have many concerns regulating
failure to thrive. Child has had know
discernible weight gain in list two months and
weight today is 12 pd 6 oz, well below the 5th
percentile. Chart was not available. The will
see dr Mayes and address issues of failure to
thrive. Did make some detary suggestions.

Dr. Micheals
Pediatric Gastroenteroloy
Community Medical Center
cc: William Jones, M.D. – Urgent Care
Eric Mayes, M.D. – Pediatrics

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
12. ____________________
13. ____________________
14. ____________________
15. ____________________
16. ____________________
17. ____________________
18. ____________________
19. ____________________
20. ____________________

Broken Record - Key

Take on the role of a transcriptionist or records clerk; correct the following record, identifying the errors on the blank lines provided.

10/20/01 Ramona Lang 01 087 344.1	
Ramona was seen last evening by Dr. Jones	1. don't use patients name in own chart
in the Urgent Care with a wite count of	2. missing letter - white
20,000 and a tem. max of 104.	3. abbreviation error - temp
He was noted to have bilateral otitis media	4. wrong pronoun - she
and there rales on auscultation. After some	5. missing word - there were rales
discussion I sugested placing her on Cefzil	6. missing letter - suggested
since previous antibiotics were ineffective.	7. extra spaces - since previous
She is much improved this am. Child is	8. abbreviation error - a.m.
afebrile, not recieving Tylenol. Respiratory	9. misspelled word - receiving
rate is 12 and unlabored. child is alert, well-	10. Capitalization - Child
hydrated, nontoxic and smileing during exam.	11. misspelled word - smiling
Parents have many concerns regulating	12. wrong word - regarding (regulating)
failure to thrive. Child has had know	13. wrong word - no (know)
discernible weight gain in list two months and	14. wrong word - last (list)
weight today is 12 pd 6 oz, well below the 5th	15. abbreviation error - lb. (pd)
percentile. Chart was not available. The will	16. missing letter - they (the)
see dr Mayes and address issues of failure to	17. abbreviation error - Dr.
thrive. Did make some detary suggestions.	18. missing letter - dietary
	19. can't leave blank line in chart
Dr. Micheals	
Pediatric Gastroenteroloy	20. missing letter - Gastroenterology
Community Medical Center	
cc: William Jones, M.D. – Urgent Care	
Eric Mayes, M.D. – Pediatrics	

I Can File!

There are three basic methods for filing in health care facilities – alphabetically by name, numerically, or by subject. Patient charts are usually filed alphabetically or numerically while business records or correspondence are filed by topic.

Alphabetical filing follows the same rules as looking up words in a dictionary or telephone directory. File by last name first, then by first name if the last names are the same. When only initials are given they will be filed before full names. Prefixes should be considered part of the last name (such as von Schmidt is filed under "V"). Abbreviated parts of a name are filed as if they are written out. Terms of seniority and titles (Dr., Sr., etc.) and articles such as "a" and "the" are disregarded in indexing.

Numeric filing may be combined with **color filing** in most large clinics or hospitals. This is an indirect filing system, requiring you to cross-reference a color or number with an alphabetic group. Files may be assigned and filed in consecutive numeric order or they may use a "terminal digital sequence" where the digits are separated into groups of two or three numbers and filed in order from right to left across the group of numbers.

Ex. Consecutive:		Terminal:	
Morales, Maria	012479	Carter, John	01 99 00
Rees, Charles	012480	Herr, Leonard	01 68 21
Dreis, Patrick	012481	Cook, Robert	75 34 23
Griss, Randal	012482	Bar, Troy	90 34 23

Color-coding makes it easier to visually find a filing error and to locate the correct section for filing, but it requires more training to use. There are many different systems of color-coding, with each color representing a different section of the alphabet or a different set of numbers. One system of color-coding is:

Red – ABCD or 1,6
Yellow – EFGH or 2,7
Green – IJKLMN or 3,8
Blue – OPQ or 4,9
Purple – RSTUVWXYZ or 5,0

This system could be combined with terminal digit filing as well, so that all numeric files ending in 23 would have a yellow and green band. Usually a pre-determined section of the terminal digit system is color-coded.

Test your filing skills with the following activity!

Goal:

To color code and organize patient charts using an established coding system to effectively facilitate filing and finding information.

Supplies:

20 fictitious patient charts
20 file folders
20 folder labels
Information on agency's coding system (or use the systems described previously)
Color labels (may use markers)
File box

Color Coding Procedures:

1. Arrange charts in indexing order – teacher will direct you as to which system to follow. When all of the charts have been color-coded they will be in filing order.
2. Pick up the first chart and note the patient's surname and/or chart number. Use the portion of the name or number for filing as specified by your agency (teacher).
3. Choose a folder label with the appropriate color (or put color tabs on one).
4. Type or write the patient's name on a label in indexing order and apply it to the folder (you may use paper clips if you want to use the set of folders over again). This identifies the sequence of the folder in the filing system.
5. Repeat steps 3 and 4 with each of the charts until all have been coded.
6. Check the entire group of folders for any isolated color. All charts of the same color within each letter of the alphabet will be grouped together.
7. Place the folders in the file box.

Alphabetical Procedures:

1. Place the chart into an empty folder and label it with the patient's surname first, first name last.
2. Sort the folders alphabetically into groups by the first letter of the last name.
3. Within each letter grouping, alphabetically sort the folders further. All should be in the correct alphabetical sequence by last name, then first name, then any middle initials and/or titles.
4. Place the folders in the file box.

Added Challenge!

Have a few assorted files already correctly filed in the file box. The challenge is to efficiently place the newly filed folders in the correct position around the ones already there!

Try giving yourself a time limit of 3 minutes or five minutes. Why is it important to be able to perform this skill quickly?

Family Insurance Survey

Name______________________________

Parent/Adult: *While it would be helpful for this student to understand the basics of your health insurance plan, feel free to request that they* ***not share*** *these details in class. You may give estimates or refer to your actual written health insurance plan in answering the questions. If there are items you are unsure about, perhaps this is a good time to review your policy!*

Background information:

Name of insurance plan:____

Type of plan (circle one): HMO PPO Private
Other___________________

How long did you have to work before you could obtain coverage?

Pre-admission certification requirements?

Pre-existing condition exclusions or waiting periods?

Expenses:
Cost of plan to you (monthly fee or percent)? _______________
Cost to employer?_______________

Policy deductible?

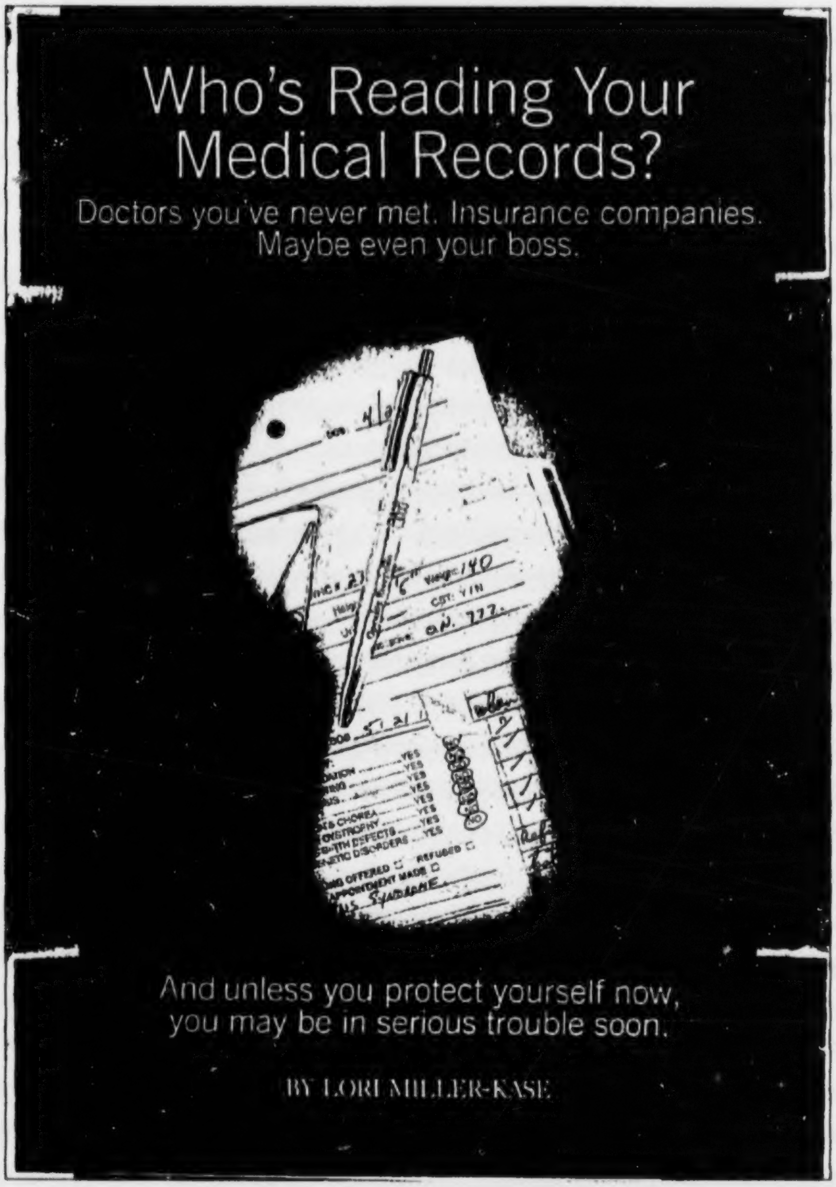
Items requiring co-payment?

Maximum out-of-pocket expense?

Do you pay first, then get reimbursed or does the insurance company handle the payments?

Coverage and limitations:

Area of coverage:	Covered?	Additional costs?	Limitations?
Ambulance			
Emergency room use			
Office visit			
Prescriptions			
Immunizations			
Vision exams			
Orthodontics			
Preventative dental			
Diagnostic services (x-ray, MRI, blood work, etc)			
Surgery			
Medical Supplies			
Transplants			
Hospital Inpatient stays			
Outpatient therapy (physical, speech, occupational)			
Mental health/Alcohol/Drug abuse services			
Licensed Skilled Nursing Home			



Who's Reading Your Medical Records?

Doctors you've never met. Insurance companies.
Maybe even your boss.

And unless you protect yourself now,
you may be in serious trouble soon.

BY LORI MILLER-KASE

Source: *Good Housekeeping*, August 1999, pp. 116-118, 158.

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Imagine that you're visiting an ob/gyn for the first time. The receptionist asks you to fill out a standard questionnaire about your family and personal health history, which probably includes inquiries about previous pregnancies and any medications you are taking. During your examination, the gynecologist is likely to ask you even more sensitive questions—about your sexual activity, possible HIV exposure, perhaps whether you've ever had any emotional problems. You may feel uncomfortable sharing this information with your doctor. But the question that should really shake you is: Do you know whom your *doctor* is going to share it with?

Today's managed-care system—which is, in essence, health care by committee—requires that numerous parties have access to a patient's medical data. And with 30 percent of private practices and many of the country's hospitals now recording patient files electronically, your most guarded secrets can be transmitted effortlessly among doctors' offices, hospitals, insurance companies, and even employers with the strike of a computer key. "I worked at a hospital that had had online records for three years," says Dianne Brownson, a former intensive-care nurse. "All the local doctors on this computer service can access anyone else's records, as can the nurses, receptionists, secretaries, and billing clerks," she says.

Indeed, over the course of a typical hospital stay, experts estimate that between 80 and 100 individuals may have access to your chart—from doctors and nurses to medical students, file clerks, and insurance-company employees who review cases to determine whether hospitalization is necessary (see "Where Does Your Information Go?" page 158).

And, aside from those who have a legitimate reason to look at your records, others may also be able to log on to them with little difficulty. In Massachusetts, for example, a convicted child abuser employed at a hospital gained access to nearly 1,000 computerized patient files and made phone calls to children whose records he uncovered. And at a Florida hospital, a 13-year-old girl—visiting her mother, employed there as a records clerk—managed to get into a database of former emergency-room patients. As a prank, the girl phoned the patients, telling them they had tested positive for HIV. (Some prank…one patient attempted suicide as a result.)

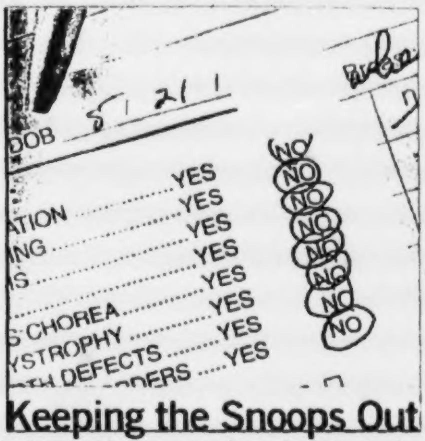
But even without such blatant violations, there are other concerns about medical privacy. Indeed, most people probably don't realize to what degree they've given away their confidentiality rights. When you apply for health insurance, for example, you sign a release with a clause allowing the insurance company to share your medical information with other health, life, and disability insurance companies; subsequently, your insurance carrier passes your data along to the Medical Information Bureau (MIB), a database that is available to more than 600 insurance companies. Or, when you go to the hospital or file a claim to be reimbursed for a doctor visit, you consent to having your records sent to your insurance company—and if your employer pays for your health care, you, in effect, give permission for your personal medical data to be passed on to someone at your employer's office, and that person may not keep it confidential.

Congress is considering various versions of a bill to address patients' confidentiality—indeed, under the Health Insurance Portability and Accessibility Act of 1996, Congress is mandated to act this summer or the Administration can impose its own regulations. As we went to press, debate was still ongoing, but privacy-rights activists were concerned that insurance-industry pressure could lead to legislation that would further undermine patient privacy. (For updates, log on to *www.nationalcpr.org*.)

Meanwhile, without any safeguards in place, even your peace of mind remains vulnerable. Doctor visits may begin to feel like job interviews. "Patients may become careful, guarded, wondering what they should say, what they should keep secret," says Denise Nagel, M.D., a Boston-based psychiatrist and director of the National Coalition for Patient Rights.

More distressing, the widespread sharing of medical information can cost you vital insurance coverage. That's what happened to Theresa Morelli, a lawyer in Akron, OH, who applied for disability insurance shortly after she began working. "I was in good health and had passed the company's medical exam," recalls Morelli, now 37, "so I thought there would be no problem." But a month later, the insurer rejected her application.

It turned out the insurance company had learned that, five years earlier, Morelli's father had been diagnosed with Huntington's chorea, an incurable genetic *(continued on page 158)*



Keeping the Snoops Out

- Instruct your doctor to provide only relevant summaries (not your entire medical record) to insurers. If you want a procedure or condition kept confidential, write a note revoking your consent to release information to your insurer or employer. (You may have to pay for the treatment yourself.)
- When filing an insurance claim, try to limit how much information is released. Look for the Authorization to Release Information clause near the space for your signature; according to the Association of American Physicians and Surgeons, you can change it so that it reads something like: "I authorize my records from [name of doctor, hospital, clinic] for the [date of treatment] as relates to [the condition treated]."
- Going to a health fair? Before having your blood pressure taken (or filling out any questionnaires), ask who will have access to the data collected.
- Check whether your medical information is on file with the insurance industry's Medical Information Bureau (MIB) and—if so—whether it's accurate. To obtain a copy of your file (you may have one if any of your insurers determined that you have a condition that would make you an insurance risk), write to the MIB at P.O. Box 105, Essex Station, Boston, MA 02112, or call 617-426-3660. The cost of obtaining your file is eight dollars.

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MEDICAL RECORDS

(continued from page 117)

condition. At the time, Morelli's family physician had noted the diagnosis on the outside of her file, and it was on the office records that were sent to the insurance company. Ironically, a couple of years later, Morelli's father was reevaluated and found to have Alzheimer's disease, not Huntington's. But now—fearful that the Alzheimer's diagnosis will become known—Morelli is reluctant to apply for any health insurance that requires revealing the condition.

That's just the problem, argue MIB executives. Because applicants may withhold important information, thus raising company costs and in turn the amount insurers must charge customers, the insurance industry needs to have access to significant details of your medical history. But it's how insurers interpret the details that's worrisome, say experts. Take the issue of genetic tests. "They may yield clues about your future, but they cannot offer an absolute guarantee that someone will develop a particular illness," notes Martin Teitel, Ph.D., executive director of the Council for Responsible Genetics. What's more, you don't know when a disease might kick in or how severe it will be if it does. "It would be unfair to discriminate against consumers based on such uncertain knowledge," argues Teitel.

Some doctors are trying to help protect patients' privacy by limiting what they enter into their files. Joseph Heyman, M.D., an ob/gyn in West Newbury, MA, says that when a woman tells him something that she doesn't want released to anyone, he will write it in code. "My problem is that when the patient comes back a year or two later, I don't remember what the code means," Dr. Heyman admits. "Then I may have to force this poor woman to go through the whole thing all over again."

But it may be in the workplace that people feel most vulnerable about having items from their medical files disclosed. Not only could revelations prove embarrassing (suppose you were treated for panic attacks or an STD), but they could jeopardize your career. In a 1996 survey of 84 Fortune 500 companies conducted by the Survey Research Laboratory at the University of Illinois, just over a third of the respondents admitted to using information contained in medical records in making hiring, firing, and promotion decisions.

Although the Americans with Disabilities Act makes it illegal for employers to discriminate based on an employee's disabilities, the law doesn't cover companies with fewer than 25 workers. Nor does every health condition count. A disability is defined as something that severely limits one's ability to carry out major life activities; PMS, for example, is a condition that might lead to discrimination but wouldn't be covered by the act.

Where Does Your Information Go?

Step 1:

You visit your ob/gyn and the receptionist pulls your medical record. Nurses and other doctors in the office may have access to your files.

Step 2:

Your medical information—in some cases your entire file, in others only that day's record—is sent to your insurance company.

Step 3:

Your insurance company may pass your medical information along to your employer. Also, if you have a condition that affects your "insurability," the company may pass your data to the Medical Information Bureau (MIB). More than 600 insurance companies have access to MIB files.

Step 4:

Your records may be sent to your primary-care physician if he referred you to the ob/gyn or if you belong to an HMO.

Step 5:

Your file may be forwarded to any number of government agencies, depending on your condition. If you have a sexually transmitted disease, your medical information will be sent to the state health department and/or the Centers for Disease Control and Prevention. If you have cancer, your data may be sent to state and/or Federal cancer registries.

Step 6:

Researchers may obtain your files from a cancer registry and use the information in a study.

For hospital stays, the flow is similar, though more parties, such as state licensing agencies, may have an opportunity to see your records.

Because most employers are either paying claims for their employees, or paying an insurance group to do so, there is at least one person in a company (typically, the benefits administrator) who has access to all employee medical records. "The question is whether they keep the knowledge they acquire to themselves," says Lewis Maltby, director of the American Civil Liberties Union Task Force on the Workplace. "Frequently, they don't."

There is great pressure on benefits administrators to share financially relevant information with company higher-ups, explains Maltby. "Employers don't want to promote someone who might get sick next month." Maltby, a former corporate attorney, says he attended meetings in which employers sat down with the benefits manager to "find out who was really sick last year," and then discussed ways to steer those individuals toward HMO coverage rather than more expensive health plans. "Which doesn't necessarily mean they'll get bad care," he notes. "But it does mean that senior management knows all about this person's medical condition." (If you're concerned about confidentiality, call your company's human resources department and ask if medical files are secure and who has access to them.)

Finally, patient information has become a hot commodity in the pharmaceutical industry. When Thea Wachsman had a routine physical in 1996, her internist sent her to a lab near her Boca Raton, FL, home for a complete blood test. Her cholesterol level was high. Twelve days later, the 57-year-old bookkeeper was shocked to receive a letter from Sandoz Pharmaceuticals urging her to consider its cholesterol-lowering drug, Lescol. *Your name has been selected from a list of people who have identified themselves as having high cholesterol*… the letter began.

"I, of course, had never identified myself as such," says Wachsman, who was outraged that her private medical problem had made its way to the pharmaceutical firm's marketing department. According to Wachsman, the drugmaker told her the information came from a questionnaire she filled out. "I would never do anything so dumb," says Wachsman, "and anyway, I'd only just learned I had high cholesterol." She believes that the source was either her doctor's office or the lab, and has since found new health-care providers. ★

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Office Gossip:
You probably know people who gossip a lot. How do you feel about friends who gossip at school? Do you trust them with your private thoughts? Do you trust the information that they give you about others? Do you think they could maintain confidentiality if they worked in a health care setting? Are there some kinds of information that are okay to pass on "through the grapevine?" Is it still gossip when you don't put a person's name on the story you are telling? What are some of the undesirable characteristics of rumors and gossip? What makes gossip particularly difficult in an office setting?

"Borrowing" Supplies
Have you ever made a personal phone call from work? Used post-it notes or paper clips from the boss' desk to mark pages in your homework? Do you know people who use their business e-mail for personal messages or use the company car for personal errands? Sometimes the items taken are larger or more expensive—can you think of examples? Are all of these examples stealing or just borrowing—why or why not? Is it really a serious offense? What are the actual costs and effects of these types of actions? Who really pays for these supplies? Do you know the potential consequences for getting caught?

Privacy Issues
Have you ever thought about who has access to your medical information? Are you aware of all the ways your medical information is shared? There are steps you can take as a patient to help prevent unnecessary sharing of your medical information (See "Who's Reading Your Medical Records?"), but what do you think health care workers could do to prevent unnecessary breaches of privacy? What should you do if you are able to overhear a private conversation about someone's health? What's wrong with talking about an "interesting case" you encountered at work even if you don't name the client? How much information should an insurance claims agent have access to? Does an employer have a right to know the health status of their employee? Who do you think should have access to medical records? These and many other issues are being debated by employers and even Congress in an effort to develop better patient privacy – what do you think the law should include?

As an information services worker, how would these issues affect you on the job? What personal traits should a good information services worker possess? What can you do to show you have those qualities?

Health Careers: Resource Appendix

Resources Included in this Document:

Extensive List of Health Occupations

Health Organizations Listing (sorted by career cluster areas)

Health Occupations Websites

Resource Evaluation Tools and Tips

Teacher Evaluation of Internet Resources

Student Evaluation of Internet Resources

Research a Health Career and Interview questions (for individual research)

Presentation Summary Form (for use with guest speakers)

Teacher Supplement to Speaker Summary Form

Comparing Careers Form

Additional Recommended Resources:

America's Top Medical Jobs: Good Jobs in Health Related Occupations. Compiled by J. Michael Farr and edited by Kathleen Martin. Copyright 1992 by JIST Works, Inc., Indianapolis, IN.

Health Occupations: Excerpts from the Occupational Outlook Handbook. Available from Prentice Hall Career and Technology Division. Englewood Cliffs, NJ.

Wisconsin Health Careers Video. Southwestern Wisconsin AHEC and Health Care Coalition. Todd Robert Murphy, Inc. Go to www.medsch.wisc.edu/ahec/hcg.html to order a free copy.

"Health Occupations Opportunities" — This video, produced through the efforts of Wisconsin Area Health Education Centers, Wisconsin Health and Hospital Association, Rural Health Cooperatives, and the Wisconsin Nurses Association, can be found in your school's career guidance office or borrowed from your high school health occupations teacher. To order a copy please contact Southwest-A-HEC (608) 265-0637.

Extensive List of Health Occupations

Abdominal Sonographer
Accountant
Accounts Payable and Receivable Clerk
Accredited Record Technician
Activity Therapist
Adapted Physical Educator
Adjunctive Therapist
Administrative Assistant
Administrative Dietitian
Adult-Nurse Practitioner
Air-Pollution Control Engineer
Anatomist
Anesthesiologist
Animal Health Technician
Animal Technician
Anthropologist
Art Psychotherapist
Art Specialist
Art Therapist
Assistant Laboratory Animal Technician
Athletic Trainer
Bacteriologist
Behavioral Pharmacologist
Biochemical Pharmacologist
Biochemist
Bio-Environmental Engineer
Biological Photographer
Biological/Biomedical Communicator
Biologist
Biomathematician
Biomedical Engineer
Biomedical Equipment Technician
Biomedical Photographer
Biophotographer
Biophysicist
Biostatistician
Bookkeeper
Cafeteria Manager
Cardiac Catheterization Assistant/Technician
Cardiac Catheterization Technician
Cardiologist
Cardiology Technologist/Technician
Cardiovascular Pharmacologist
Cardivascular Perfusionist
Cardiovascular Technician
Cardiovascular Technologist/Technician
Cashier
Certified Athletic Trainer
Certified Laboratory Assistant
Certified Nurse Midwife
Certified Operating Room Technician
Certified Registered Nurse Anesthetist
Chaplain
Chemotherapist
Child Health Associate
Child Psychiatrist
Chiropractic Orthopedist
Chiropractic Orthopedist
Chiropractic Physician
Chiropractic Roentgenologist
Chiropractor
Clinical Chemist
Clinical Chemistry Technologist
Clinical Dietitian
Clinical Engineer
Clinical Perfusionist
Clinical Pharmacologist
Clinical Psychologist
Clinical Social Worker
Collection Clerk
Community Dietitian
Community Health Educator
Community Health Medic
Community Mental Health Technician
Compensated-Work Therapist
Computer Operator
Computerized Tomographer
Consultant Dietitian
Controller-Business Manager
Corrective Therapist
Counseling Psychologist
Creative Arts Therapist
Credit Manager
Cryogenicist
Cytotechnologist
Dance/Movement Therapist
Dance Therapist
Dental Assistant
Dental Hygienist
Dental Surgeon
Dental Laboratory Technician
Dentist
Dermatologist

Developmental Psychologist
Diagnostic Medical Sonsographer
Dialysis Technician
Dialysis Technologist
Dietetic Assistant
Dietetic Clerical Worker
Dietetic-Service Supervisor
Dietetic Technician
Dietetic Worker
Dietician
Dispensing Optician
Doctor
Doctor of Chiropractic
Doctor of Dental Medicine
Doctor of Dental Surgery
Doctor of Medicine
Doctor of Optometry
Doctor of Osteopathy
Doctor of Podiatric Medicine
Doppler Technologist
Echocardiogram Technician
Echocardiographer
Echoencephalographer
Ecologist
Education Coordinator
Educational Psychologist
Educational Therapist
EEG Technician
EEG Technologist
EKG/ECG Technician
Electroencephalographic Technician
Electroencephalographic Technologist
Electronic Data Processing Manager
Embryologist
Emergency Medical Technician
Employment Interviewer
Employment Surpervisor
EMT-Ambulance
EMT-Non Ambulance
EMT-Paramedic
Endocrine Pharmacologist
Entomologist
Environmental Engineer
Environmental Health Specialist
Environmental Health Technician
Environmental Hygienist
Environmentalist
Epidemiologist
Executive Housekeeper
Experimental psychologist
Extra-Corpeal Technologist
Family-Nurse Practitioner
Family Practitioner
File Clerk
Food Engineer
Food Production Manager
Food Scientist
Food-Service Supervisor
Food Technologist
Foot Specialist
Forensic Photographer
Garden Therapist
General Office Clerk
General Secretary
Geneticist
Gerontological Nurse
Graphic Communicator in Medicine
Gynecologist
Health Economist
Health Educator
Health Information Specialist
Health Lawyer
Health Physicist
Health Sciences Librarian
Health Sciences Library Technician
Health Services Administrator
Health Sociologist
Hematologist
Hematology Technologist
Hemodialysis Technician/Technologist
Histologic Technican
Holter Monitoring Technician
Home Economist
Home Health Aide
Horticultural Therapist
Hospital Administrator
Hospital Attendant
Human Service Worker
Hydrophysicist
Immunologist
Incentive Therapist
Industrial Therapist
Information Clerk
Information and Referral Specialist
Inhalation Technician
Inhalation Therapist

Instructor of the Blind
Insurance Clerk
Intensive/Critical Care Nurse
Internist
Inventory Clerk
Job Analyst
Key Punch Operator
Laboratory Animal Technician
Laboratory Animal Technologist
Laundry Manager
Licensed Practical Nurse
Licensed Psychiatric Technician
Licensed Vocational Nurse
Long-Term Care Administrator
Licensed Practical Nurse
Licensed Vocational Nurse
Mail Clerk
Management Engineer
Mamographer
Manual Arts Therapist
Maternal-Child Nurse Practitioner
Medical Aide
Medical Artist
Medical Assistant
Medical Assistant in Pediatrics
Medical Coding Specialist
Medical Engineer
Medical Illustrator
Medical Laboratory Technician
Medical Librarian
Medical Office Assistant
Medical Photographer
Medical Record Administrator
Medical Record Technician
Medical Secretary
Medical Social Worker
Medical Surgical Nurse
Medical Technologist
Medical Transcriptionist
Medical Writer
Mental Health Assistant
Mental Health Associate
Mental Health Worker
Microbiologist
Microbiology Technologist
Nurse
Nurse Anesthetist
Nurse Clinician
Nurse-Midwife
Nurse Practitioner Nurse Aide
Nursing Assistant
Nursing Home Administrator
Obstetrical/Gynecological Sonographer
Obstetrical Nurse
Obstetrician
Occupational Health Nurse
Occupational Therapy Assistant
Occupational Therapist
Occupational Therapist Registered
Operating Room Nurse
Operating Room Technician
Opthalmic Assistant
Opthalmic Dispenser
Opthalmic Laboratory Technician
Opthalmic Medial Assistant
Opthalmic Sonographer
Opthalmic Technician
Opthalmologist
Optical Laboratory Technician
Optical Mechanic Optician
Optometric Assistant
Optometric Technician
Optometrist
Oral Pathologist
Oral Surgeon
Orderly
Orientation and Mobility Instructor for the Blind
Orientor
Orthodontist
Orthopedic Physician assistant
Orthopedic Surgeon
Orthopedist
Orthotic-Prosthetic Technician
Orthotist
Otolaryngologist
Paramedic
Parasitologist
Pathologist
Payroll Clerk
Pediatric Medical Assistant
Pediatric-Nurse Practitioner
Pediatrician
Pedodontist
Periodontist
Perfusion Technologist
Perfusionist

Peripatologist
Personal Hygiene Teacher
Personnel Director
Personnel Psychologist
Pharmacist
Pharmacologist
Phonocardiograph Technician
Psychiatrist
Physical Anthropologist
Physical Therapist
Physical Therapist Assistant
Physical Therapy Assistant
Physical Therapy Technician
Physician
Physician Assistant
Physician Associate
Physiologic Technologist/Technician
Physiologist
Physiotherapist
Plastic Surgeon
Podiatric Assistant
Podiatric Assistant, Certified
Podiatric Surgeon
Podiatrist
Podogeriatrician
Podopediatrician
Proctologist
Prosthetist
Prosthodontist
Psychiatric/Mental Health Nurse
Psychiatric/Mental Health Technician
Psychiatric Social Worker
Psychiatrist
Psychologist
Psychometric Psychologist
Psychomotor Therapist
Public Health Dentist
Public Health Educator
Public Health Interpreter
Public Health Nurse
Public Relations Director
Pulmonary Function Technologist/Technician
Pulmonary Therapist
Purchasing Agent
Radiation Protection Engineer
Radiation Therapy Technologist
Radiologist
Radiographer
Radiographic Technologist
Radio-Isotope Technologist
Radiologic Technologist
Radiologist
Radiopharmacist
Radiophysicist
Receptionist
Recreation Specialist
Recreation Therapist
Registered Dental Hygienist
Registered Nurse
Registered Record Administrator
Rehabilitation Counselor
Rehabilitation Nurse
Rehabilitation Psychologist
Rehabilitation Teacher
Rehabilitation Therapist
Renal Technician/Technologist
Research Dietician
Respiratory Therapist
Respiratory Therapist–Adult Critical Care
Respiratory Therapist–General Pediatric Care
Respiratory Therapist–Pediatric/Neonatal Care
Respiratory Therapy Technician
Sanitarian
School Health Educator
School Nurse
School Psychologist
Science Writer
Scientific Photographer
Social Anthropologist
Social Psychologist
Social Service Assistant
Social Worker
Solid Waste and Management Engineer
Special Educator
Specialist in Blood Bank Technology
Speech and Language Pathologist/Audiologist
Speech Correctionist
Speech Therapist
Stenographer
Stock Clerk

Stockroom Manager
Stress Testing Technician
Surgeon
Surgeon's Assistant
Surgical Technician
Teacher of Blind Children
Teacher of the Visually Handicapped
Technical Writer
Therapeutic Activities Worker
Therapeutic Exercise Specialist
Therapeutic Recreation Specialist
Therapist for the Blind
Thermographer
Thoracic Surgeon
Toxicologist
Training Coordinator
Typist
Ultrasound Technologist
Urologic Physician Assistant
Urologist
Vectorcardiograph Technician
Veterinarian
Veterinary Science Technician
Virologist
Vocational Rehabilitation Counselor
Wage and Salary Administrator
Wastewater Engineer
Work Evaluator
Xeroradiographer
X-ray Technologist

Source:

> *"Health Care Professions: A resource book with job descriptions and current scholarship information for health professions in Wisconsin." (1991) by Wisconsin Hospital Association.*

Health Organization Listing

I. Diagnostic Services

American Optometric Association
243 N. Lindberg Blvd., St. Louis, MO 63141

American Society of Radiological Technologists
1500 Central Ave., Suite 5E, Albuquerque, NM 87123

American Medical Technologists
710 Higgins Road, Park Ridge, IL 60068

American Society of Clinical Pathologists
Board of Registry
PO Box 12270, Chicago, IL 60612

American Cardiology Technologists Association
1980 Isaac Newton Square, South Reston, VA 22090

American Society of Cytology
1015 Chestnut Street, Suite 1000, Washington, DC 20005

II. Therapeutic Services

American Academy of Orthopedic Surgeons
2222 S. Prospect Ave., Park Ridge, IL 60068

American Association of Pathologists and Bacteriologists
9650 Rockville Pike, Bethesda, MD 20814

American College of Sports Medicine
PO Box 1440, Indianapolis, IN 46206

American Dental Association
211 E. Chicago Ave., Chicago, IL 60611

American Medical Association
535 N. Dearborn Street, Chicago, IL 60610

American Pharmaceutical Association
2215 Constitution Ave., N.W., Washington, D.C. 20037

National Institute of Mental Health
Parklawn Building, 5600 Fishers Lane, Rockville, MD 20850

III. Information Services

American Medical Record Association
John Hancock Center, Suite 1850,
875 N. Michigan Ave., Chicago, IL 60611

Healthcare Financial Management Association
2 Westbrook Corporate Ctr., Suite 700, Westchester, IL 60154

National Association of Health Unit Clerks/Coordinators
709 West Seldon Lane, Phoenix, AZ 85021

American Health Care Association
1201 L Street NW, Washington, DC 20005

American Society for Health Care Planning and Marketing
American Hospital Association
840 North Lake Shore Drive, Chicago, IL 60611

American College of Hospital Administrators
840 North Lake Shore Drive, Chicago, IL 60611

American Health Information Management Association
919 North Michigan Ave., Suite 1400, Chicago, IL 60611-1683

IV. Environmental Services

American Dietetic Association
216 W. Jackson Blvd., Suite 800, Chicago, IL 60606

Environmental Management Association
1019 Highland Ave., Largo, FL 34640

Association for the Advancement of Medical Instrumentation
1901 North Fort Myer Drive, Suite 602, Arlington, VA 22209-1699

Water Pollution Control Federation
601 Wythe Street, Alexandria, VA 22314

Society of Biomedical Equipment Technicians
3330 Washington Boulevard, Suite 400, Arlington, VA 22201

National Environmental Health Association
720 South Colorado Boulevard, South Tower, Suite 970, Denver, CO
80222

Health Occupations Professional Educators Presentation

Dottie Winger, Presenter – March 2001
Madison East High School
2222 East Washington Ave.
Madison, WI 53704
dwinger@madison.k12.wi.us
Phone (608) 204-1666
Fax (608) 204-0388

Booklets in "School to Career" Series

www.bie.org - click on "School to Work," then on "Buck Institute Handbooks." The Buck Institute for education offers informative booklets for students, employers, etc., involved in work-based learning. Excellent overview of legal issues, despite the slant toward California law. Very useful for instructors who place students in work sites (paid or unpaid, clinical or co-op).

Cancer Risk

www.yourcancerrisk.harvard.edu/ - estimates your risk of cancer and provides personalized tips for prevention. Most accurate for people over 40, but can be used at any age to determine your future risk if you continue the same lifestyle. Offered by the Harvard Center for Cancer Prevention.

Cells Alive!

www.cellsalive.com - an animated study of cells and microbiology, including a quiz to check your learning. A CD of the animations is available through the site. Searchable site, plus a rated set of really good links.

Gray's Anatomy

www.bartleby.com/107/ - gray's anatomy online, searchable, with text and illustrations (some in color)!

Human Disease Project

www.curtis1.com - an index of links to human disease information plus teacher lesson plans for using the website. Written by a teacher for use by other teachers. Intended for middle and high school audiences. Includes interdisciplinary connections, parent contact letter, and grading forms.

Inner Body

www.innerbody.com - a fun, interactive way to study anatomy of the human body. An ideal reference for students. Has thousands of still images, images embedded within other images, and animated images for students to investigate. Educationally friendly advertising policy doesn't accept advertising from alcohol, tobacco, or pornographic companies or their subsidiaries. Site graphics may be downloaded or copied for a fee.

Interactive Ethics

www.swmed.edu - click on "web page directories," then "home pages," then "E" for "Ethics in science and medicine," then on "Interactive ethics" for ethics case study discussions with input from students and medical professionals. May read previous cases and comments submitted concerning the cases or submit own comments to current case study discussion. Can use the case studies for discussion in class, then hear the input of professionals and other students.

Medical Dictionary Online

www.personalmd.com/mwmedical/medical.htm - an easy to use, and a much cheaper alternative than buying a paper version of a medical dictionary! Just enter the term and it will bring up that term and any related terms. Highlight the correct choice and the Merriam-Webster Medical Dictionary definition will be displayed.

Medicine through Time

www.bbc.co.uk/education/medicine/nonint/menus/prasmenu.shtml - a BBC Education site offering interactive learning about the history of medicine from prehistory and the ancient world through modern times. Cross-referenced topics for comparison of progress over time in: disease and its treatment, anatomy and surgery, hospitals and training, public health, and alternatives to medicine. Really interesting for independent student investigation or leading a large group through discussion. Includes questions for thought.

National Consortium on Health Science Technology Education

2400 Woodlake Drive, Suite 440
Okemos, MI 48864
(517)347-3332
(517)347-4096 fax

www.nchste.org - a clearinghouse for curriculum and resources. Lots of great links, grant listings, a speakers bureau, calendar of events related to health occupations education, and products available. ("Products" downloads shortened version of national healthcare skill standards for free and can purchase full version through the site. Can also write to address above for a copy of the HSTE Pathways Model curriculum.)

Texas Health Science Technology Education

www.texashste.com - **Excellent** resource for curriculum! Developed by the HSTE Curriculum Center at the University of North Texas for their Health Science Technology Education courses to download their curriculum. Provides resources in Anatomy & Physiology, Medical Microbiology, and Pathophysiology. Includes lesson plans, worksheets and assessment rubrics. Also contains a listing of equipment and price ranges for teachers setting up a health sciences laboratory (such as a CNA lab) and many links to health-related sites. A "must see" site.

Utah's Medical Anatomy and Physiology Curriculum

www.usoe.k12.ut.us - click on Applied Tech.Ed., then click on Health Science & Tech. for power point presentations, overhead transparencies, word banks, test banks, student activity guides, etc. There are two sections, one for teachers and one for students.

Wisconsin AHEC

www.wihealthcareers.org - directories of health-related higher education programs in the state of Wisconsin, a health sciences/academic library directory, access to health-related entries in the Occupational Outlook handbook, speaker boards, and maps of Wisconsin universities, colleges, and technical colleges as well as hospitals and major medical centers, with reference to the four AHEC regions in Wisconsin.

Prentice Hall Materials

www.prenhall.com/badasch - to download power point presentations, test banks, word elements lists, student activities, etc., to go with the textbook "Introduction to Health Occupations" by Badasch/Chesebro.

www.prenhall.con/caregiver - for overhead transparencies, hyperlinks, skill checklists etc., to go with their new Certified Nursing Assistant textbook.

Zahourek Systems

www.anatomyinclay.com -for purchase: three dimensional, kinesthetic way to learn anatomy. Fun! The most you ever learned (and remembered) about anatomy in such a short time by building it yourself with clay. Although a large initial investment, it can be used over and over, can be shared with science classes, can use to teach many areas of anatomy. Site includes links to grant programs.

Favorite General Health Websites

www.americasdoctor.com - a pharmaceutical site including a drug encyclopedia and medical dictionary.

www.healthfinder.gov - developed by the U.S. Department of Health and Human Services as a gateway to reliable consumer health and human services information. Provides links to selected online publications, clearinghouses, databases, web sites, and support and self-help groups, government agencies and not-for-profit organizations that produce reliable information for the public.

www.intelihealth.com - a subsidiary of Aetna U.S. Healthcare, this site provides health trackers, interactive health tools, and advice columns. Divided into easy to use categories, including a section for caregivers. Click on "cool tools" for their interactive health tools and quizzes.

www.mayohealth.org - the Mayo Health Clinic site includes current health news headlines, a disease and condition database, and personal health scorecards. Easy to get around in and adheres to a strict advertising policy.

www.medscape.com - large collection of free, full-text clinical medicine articles enhanced with keyword searches, graphics, annotated links to Internet resources, Interactive Case Challenges, and more. Organized by specialty. Even has a humor section with database of comics! Registration is free, but does monitor users to gear advertising banners toward your interests.

www.nih.gov - the US Department of Health and Human Services National Institutes of Health provides links to the 25 Institutes and Centers that make up NIH, as well as health information, current news, and grant opportunities.

www.4woman.gov - National Women's Health Information Center, a service of the Office on Women's Health in the Department of Health and Human Services, providing a gateway to the vast array of Federal and other women's health information resources.

www.onhealth.com - a basic consumer's site for gathering health information. Uses some good toolboxes for self-help (symptom checker, infant speech checker, home medicine cabinet, fast food ordering, etc). Easy to follow and divided into categories of consumers on the home page.

Resource Evaluation Tools and Tips

1) Web site review tools help in choosing which sites to visit and which ones to skip! There are several types of review tools, including qualitative reviews, numerical or star rating systems, and gateway services which limit access to selected "quality" sites. Some of the services take a subject-specific approach while others are general, for example:

   http://www.thewebmasterstoolbox.com/authorall.htm WebMasters Tool Box is an editor-reviewed listing of sites in many categories, providing brief descriptions with ratings and competency-levels required.

   http://www.oclc.org/oclc/netfirst/9352nf/netflyer.htm NetFirst uses professional editors to abstract and index only the most applicable sites on a searchable index.

   http://www.enterweb.org/edutrain.htm ENTERWeb lists and rates Internet resources with a focus on identifying important sources of information for businesses and vocational education.

2) Use caution with search engines.
   - They may locate everything from scholarly reports to responses on a threaded discussion posted several years ago!
   - Learn to use Boolean operators to help narrow your search results.
   - Try different search engines to yield different results. One search engine may find something totally different from another.

3) Learn to read the Uniform Resource Locator (URL) for important clues about your location within a resource.

   a. Internet addresses and domain names sometimes give information about:
      The name of the server holding the information
      Stability of a resource –PURLs (persistent URLs) are forwarded if changed
      What type of organization the server is registered as
      The geographical location of the server being accessed
      The size and complexity of the site (look at the length of the URL)
      The names of directories on the site
      The name of the file being accessed
      The type of file (text, image, sound, etc.)
      ~ are usually personal files (and opinions) of individual, not organization

   b. Moving around in the site
      - Deleting files from the right-hand end of the URL can move you up in the directory and take you to the parent organization. Make sure the new URL ends with either:
        / or .html or .htm
      - If there is a home page button, it will take you to the front page of the site for information such as title, author, date, and purpose of the site.

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*Teacher Evaluation of Internet Resources**

1) **Screening Information** ⇒ Choose sources that fit your intended use.

What are you presenting?

☐facts ☐charts ☐descriptions ☐reasoned arguments
☐visuals ☐narratives ☐general opinions ☐authoritative opinions
☐examples ☐eyewitness reports ☐statistics
☐other ____________

Why? What is the purpose of the resource?____________________________

Who is your intended audience for viewing the resource?____________________

How? What software and cost limitations do your users have?_______________

2) **Evaluating Information** ⇒ Separate high quality information from low quality.

☐ **Credibility** (Look for an authoritative source that you can trust)

Author – Consider position, education, experience in the field, and reputation among peers? Are they the creator or a compiler of other sources? Is there contact information?

Quality control – Peer reviewed or edited? Correct grammar and spelling? Well organized?

Organizational affiliation – Authoritative source? Is an organization or individual represented? Are there professional, advocate, or consumer members? Is there contact information?

Metainformation – Have they received positive ratings and reviews by others?

☐ **Accuracy** (Look for a source that is up-to-date and gives the whole picture)

Date – In quickly changing fields was the source recently created or updated?
Are the links still current or have they moved?

Part or whole – Is there a larger discussion, series, etc., to cite as a complete resource?

Comprehensiveness – Does it provide opposing views? (May choose two opposing sources.)

Tone - Indicates attention to detail? Element of creativity? No sweeping generalizations made?

References – Combines print and non-Internet resources, cites individuals beyond own circle?

Added value - What is different or better about this resource as compared to others available?

☐ **Reasonableness** (Look for a source that you can believe)
  Fairness – Does it offer a balanced and reasoned argument in a well-tempered tone?
  Objectivity – Is there conflict of interest, a political agenda, or highly emotional positioning?
  Intended purpose – To inform, summarize, advertise, or entertain? Too elementary or technical?
  Moderateness – Does the claim seem realistic or probable?
  Consistency – Are there are any contradictions within the source?

☐ **Support** (Look for multiple sources with convincing evidence)
  Source documentation – Where did the information come from, can you verify it?
  Corroboration – Who else agrees with the argument? How many others agree?
  External Consistency – Does the information fit with what you already know?
  References - Are the resources inward focused or pointing out to other resources? Current?

3) **Additional Considerations**

☐ Is there attention to special needs (large print or audio options, full text options)?

☐ Does the site require additional tools which must be downloaded or purchased?

☐ Is advertising kept to a minimum? Does it impact the content? Is it appropriate?

• Adapted from:
Harris, R., *Evaluating Internet Research Sources.* 1997, Vanguard University of Southern California.
Descy, D., *Evaluating Internet Resources.* Techtrends, 1996 (September, 1996).
Internet Detective, Tonic NG.
Alexander, J. and M. Tate, *Web Resource Evaluation Techniques.* 1998, Widener University.
Grassian, E., *Thinking Critically about World Wide Web Resources.* 1995, UCLA College Library.
Grassian, E., *Thinking Criically about Discipline-Based World Wide Web Resources.* 1997, UCLA College Library.

*Student Evaluation of Internet Resources**

1) **Screening Information** ⇒ Choose sources that fit your intended use.

What are you presenting?

☐facts ☐charts ☐descriptions ☐reasoned arguments
☐visuals ☐narratives ☐general opinions ☐authoritative opinions
☐examples ☐eyewitness reports ☐statistics
☐other ______________

Why? What is the purpose of your research?

☐get new ideas ☐find support for a position
☐find opposing views ☐survey opinion
☐other ______________________________

Get clues about the context from URLs (server, type of organization, location, personal files, etc.)

2) **Evaluating Information** ⇒ Separate high quality information from low quality.

☐ **Credibility** (Look for an authoritative source that you can trust)

Author – Consider position, education, experience in the field, and reputation among peers? Are they the creator or a compiler of other sources? Is there contact information?

Quality control – Peer reviewed or edited? Correct grammar and spelling? Well organized?

Organizational affiliation – Authoritative source? Is an organization or individual represented? Are there professional, advocate, or consumer members? Is there contact information?

Metainformation – Have they received positive ratings and reviews by others?

☐ **Accuracy** (Look for a source that is up-to-date and gives the whole picture)

Date – In quickly changing fields was the source recently created or updated?
Are the links still current or have they moved?

Part or whole – Is there a larger discussion, series, etc., to cite as a complete resource?

Comprehensiveness – Does it provide opposing views? (May choose two opposing sources.)

Tone - Indicates attention to detail? Element of creativity? No sweeping generalizations made?

☐ **Reasonableness** (Look for a source that you can believe)

Fairness – Does it offer a balanced and reasoned argument in a well-tempered tone?

Objectivity – Is there conflict of interest, a political agenda, or highly emotional positioning?

Intended purpose – To inform, summarize, advertise, or entertain?

Too elementary or technical?
Moderateness – Does the claim seem realistic or probable?
Consistency – Are there are any contradictions within the source?

☐ **Support** (Look for multiple sources with convincing evidence)
Source documentation – Where did the information come from, can you verify it?
Corroboration – Who else agrees with the argument? How many others agree?
External Consistency – Does the information fit with what you already know?

3) Living in the Information CAFE ⇒ Advice for living in an age of excess of information

Challenge information and demand accountability (Why should I believe it?)

Adapt your requirements to fit the importance of the situation. (How strong/important is the claim?)

File new information away until more information comes in (Don't jump on the bandwagon)

Evaluate regularly for new information or changes in circumstances.

- Adapted from:

Harris, R., *Evaluating Internet Research Sources.* 1997, Vanguard University of Southern California.
Descy, D., *Evaluating Internet Resources.* Techtrends, 1996 (September, 1996)
Internet Detective, Tonic NG.
Alexander, J. and M. Tate, *Web Resource Evaluation Techniques.* 1998, Widener University.
Grassian, E., *Thinking Critically about World Wide Web Resources.* 1995, UCLA College Library.
Grassian, E., *Thinking Critically about Discipline-Based World Wide Web Resources.* 1997, UCLA College Library.

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Research a Health Career

Use the library or other reference books, or professional organizations to research a career. If you have access to the Internet, use www.wihealthcareers.org as one of your reference sources. Type or write a report on the career containing the following information:

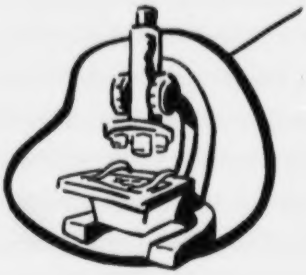
Name of career
Type of work done in the career
Personal qualities and abilities needed for success in the career
Educational requirements (these can vary from state to state)
Licensure, certification, or registration requirements
Working conditions
Possible places of employment
Advancement opportunities
Wages and benefits
Job outlook for the future
Name and address of group or organization from which additional information about career can be obtained.

Interview Questions

Interview an individual currently employed in the health career you selected. Obtain answers to the following questions:

Title of career field or job
What are the major duties and responsibilities?
What is the outlook for employment in this career?
What is the level of education required?
What do you like most about this career?
What do you like least about this career?
What special skills are required for this career?
Are there any special physical demands?
What is the opportunity for advancement in this career?
How many other people do you work with?
Are there any special materials, equipment, tools, machinery, computers, etc., which you have to know how to use in this career?
What personal qualities does a person need for this career?
How many hours do you usually work?
If you were choosing a career field at this point, would you choose this career? Why or why not?

Presentation Summary Form



1. What information did you hear that you may find useful?

2. Did you hear any information that you may want to consider when choosing your own career?

3. What kinds of things did you like about the career or what kinds of things did you not like about the career?

4. Would you consider a career in this field? Why or why not?

Teacher Supplement to Speaker Summary Form

- Give students the responsibility of introducing speakers and writing thank you notes
- Have the students write a newspaper covering the information they received from each guest speaker
- Always provide time for asking questions
- Consider parents of students to use as your guest speakers

Comparing Careers Form

Career #1	**Career #2**
Duties:	
Patient Contact:	
Benefits:	
Advancement:	
Salary:	
Place of Employment:	
Responsibilities:	
Education:	
Conclusion	
Career Choice:	
Reason for Choice:	

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

ERIC
Educational Resources Information Center

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